Information Technologies Activity Report

Second High Performance Computing Cluster

Building on the success of the Mills High Performance Computing (HPC) cluster, the University is deploying a second community cluster to perform complex computational tasks for researchers in engineering; physical, natural, social, policy, and decision sciences; and finance.

The new cluster will give more UD researchers access to HPC resources and will provide faculty with faster compute nodes and more storage than is available on Mills.

The community cluster model is advantageous for researchers, allowing them priority access to high performance computing power while sparing them the ongoing financial liability of purchasing and running their own computing clusters. Compute nodes are still available for purchase. See IT's information about the new cluster for details.

"The Mills cluster has been one of the reasons why I accepted my position at UD," said Cristina Archer, associate professor in the University of Delaware's College of Earth, Ocean, and Environment. "Without it, I would not have been able to perform the computer-intensive simulations that I need for my research on turbulence generated by wind turbines. Being the biggest users of the cluster, my team and I have been interacting very closely with the IT team, whose support and help have been invaluable," Archer said.

Edward Ratledge, director of the Center for Applied Demography and Survey Research (CADSR) at UD, and his research group have also benefitted from the availability of High Performance Computing power.

David Racca, policy scientist in CADSR and PI for the project, said that CADSR has developed "a statewide travel speed survey to be used as transportation performance measures by transportation and land use planners and analysts."

"CADSR has collected a large amount of information as provided by GPS readings from State vehicles over the last three years. On the fastest personal computer available, processing a month's worth of this information can take over 3 weeks of continuous computer processing time, which proves to be a practically impossible task. The HPC cluster now processes a month's worth of information in 3 days, making the development of this information possible and an ongoing statewide travel speed survey a reality," Racca said.

For any questions or to inquire about purchasing compute nodes, send email to it-hpc-interest@udel.edu.

Secure UD Initiative

The University is rolling out a new initiative to inform all UD employees about our responsibility to protect University information, confidential information, and personal information. The theme of the Secure UD initiative is that we are all targets for hackers and, therefore, information security is everyone's responsibility.

Secure UD is a product of collaboration between UD Information Technologies (IT), HR, OCM, UD executive leadership, and a faculty member from the Lerner College of Business and Economics.

The Secure UD initiative will include

- Online information security training for UD employees.
- Information security newsletters sent to IT-Pros and HR Liaisons to share with their departments.
- Newly designed Web pages to make it easier to find security information.

In April, we invited members of the IT-Pros and HR Liaisons email lists to join a pilot of the online training program. The Secure UD training program will be available to all UD employees in June 2014, but UD employees can go to the Secure UD Web site and ask to join the pilot phase now.

On May 21, we will send out our first UD Secure newsletter, linking to a new part of the IT Web site with security tips and news items of interest to the University community.

As more parts of the Secure UD initiative become available over the summer and fall, we will make announcements to departmental IT professionals and HR Liaisons, publish announcements in *UDaily*, and contact UD employees directly.

Planned Outages

UDSIS will be brought down for scheduled maintenance to apply the next round of patches and fixes from Oracle. The system is expected to be unavailable on Saturday, June 7 from early morning until mid afternoon.

Security, Privacy, and Safety

The Heartbleed bug and your password

On April 7, researchers announced a security vulnerability ("Heartbleed") affecting security at over 66% of Web sites around the globe. On April 8, UD installed patches and updated security certificates on UD central servers to fix this vulnerability.

Even though there is no evidence that any UD servers have surrendered confidential information as a result of the Heartbleed vulnerability, because this vulnerability could have allowed access to password information for an extended period of time before April 8, you should change your UDelNet, CAS, email, and other central passwords as soon as possible.

As of May 7, over 19,000 people have changed their passwords voluntarily.

By the end of May, people attempting to log in with a UDelNet password created before April 8 will be forced to create a new password at the UD Network page.

You can select a new password at any time by logging in to www.udel.edu/network.

When selecting a new UDelNet password,

- Select a password that is 8 to 30 characters in length.
- Select a password or passphrase that includes at least one character from three of these four categories:
    o Upper case letters
    o Lower case letters
    o Numerals
    o Any character not listed above (except for a blank space).

For information about best password practices and advice about selecting a new password:

- Use secure passwords, UD IT's help page.
- Create strong passwords, Microsoft Safety & Security Center.

For further information, see UD IT's Heartbleed Web site or contact the IT Support Center.

Microsoft ending support for Windows XP

Microsoft has announced that as of April 8, 2014, Windows XP will no longer be supported. According to Microsoft, after that date, "your XP computer[s] will no longer receive automatic updates."

Even though Microsoft will offer some transitional anti-malware support for Windows XP through July 14, 2015, Microsoft reports that the risk to your XP system and the information stored on your XP system has dramatically increased. In addition, continued use of an XP system may put you or your department at risk of being out of compliance with legal and/or contractual security requirements, and an XP system may not work with software or hardware you are accustomed to using.

Beginning in March, IT staff have been working with departmental IT professionals and individual faculty and employees to assist in mitigating the issues raised by XP systems connected to the Internet. In general, we've been working with University departments to

- Replace or upgrade XP computers,
- Remove XP systems from the Internet, or
- Put XP systems on a secured private network.

For more information,

- Consult the UD IT help page Microsoft ending support for Windows XP,
- Contact your department's or college's IT staff, or
- Contact the IT Support Center by submitting a Help Request Form, emailing consult@udel.edu, or calling (302) 831-6000.

Infrastructure

UD modem pool dial-up service discontinued

IT will decommission the hardware that supports dial-up access to the University's network on May 31, 2014.

The modem vendor no longer supports the connection hardware UD uses. This means that there are no more security patches being issued. Similar to the recent end of support for Windows XP, continuing to use the modem hardware would make people vulnerable to risk of attack.

Clients who are using dial-up modems should make plans to transition away from using them. There are several commercial services that still offer dial-up access for people who don't have a broadband Internet connection.

If you have any questions, contact the IT Support Center by submitting a Help Request Form, emailing consult@udel.edu, or calling (302) 831-6000.

Centrex legacy voice mail service shut down

As of April 1, the voice mail system that was used with the legacy Centrex telephone service at the University was shut down.

UD clients who are not on the new voice over IP network (VoIP) and who accessed the legacy voice mail by dialing x4000 are no longer able to access messages.

To prepare for the shutdown, Telephone Services asked current clients to retrieve messages from the legacy system. Once the legacy system was shut down, messages were no longer available.

Voice mail for clients still using Centrex services will be available through the new Cisco IP phone system, but with limited capabilities. Voice mail indicators, either stutter dial tone or voice mail lights, will not work. You will need to access your mailbox to check for messages.

Telephone Services will be working with clients over the next three months to convert their voice service to VoIP to allow full voice mail integration. To request a new mailbox, send an email request that includes your name, department, and phone number to telephone-services@udel.edu.

The new VoIP voice mail system is available by dialing x7000 or *86 from a VoIP telephone. For further information, visit the VoIP Web site.

South campus network upgrade nears completion

In April, we upgraded the network connection between the UD Computing Center and Worrilow Hall to 10Gb/s, improving the network connection for University Athletics, the STAR campus, and the College of Agriculture and Natural Resources. This project is a major step towards providing a 20Gb/s diversely routed ring that will provide very fast connectivity to east and south campus. We expect work on this project to be completed in late May or early June.

UDVM "Private Cloud" service upgraded

This spring, we upgraded the hardware, network connections, and storage used for UDVM, the UD Virtualization Service. This "private cloud" currently provides a flexible, green, and cost-effective home to over 50 departmental servers. If you would like to explore using this resource, visit the UD Virtualization Service page or contact the IT Support Center. You can also submit a UD Virtual Machine Request Form online.

Teaching and Learning

Microsoft Office for UD Students

This summer, UD will begin participating in the Microsoft Student Advantage program, allowing registered UD students to use Microsoft Office at no charge on up to five computers and devices. As long as they are registered University of Delaware students, they will be able to download Office applications. They will not be able to use Office applications when they are no longer registered for UD classes. More details will be announced this summer.

Note: This program is *not* available for University-owned systems or for UD employees (unless they are also students). Access to Office products for UD employee use can be found on the UDeploy server.

Summer Faculty Institute

What do 30+ faculty presentations, a campus teaching tour, desktop yoga, a photo safari, and ice cream from the UDairy Creamery have in common? They're all features of the Summer Faculty Institute to be held June 2–6, 2014.

New this year:

- June 2: Keynote presentation by Dr. Christy Price, Carnegie Foundation 2012 Professor of the Year, Dalton State University, "EPIC FAIL! If We're Teaching, Why Aren't They Learning? Enhancing Student Achievement of Learning Outcomes with Learning-Centered Teaching."
- June 3: Featured guest presentation by Dr. Kris Shaffer, Colorado University, Boulder, "Productive Discomfort: Fostering Learning in an Inquiry-Driven Class."
- June 4: A build-your-own walking tour with teaching demonstrations at classrooms and resources that are new on campus this year.
- June 5: Plenary presentation by Robbie Melton, associate vice chancellor for learning and educational technology and innovations, Tennessee Board of Regents, "Creative Teaching and Learning with Emerging Technologies in YOUR Hands."
- June 6: Unstructured time to work on your personal projects, get individual assistance, or spend more time on any topic from earlier in the week.
- Throughout the week, UD faculty and staff will offer over 30 presentations, panels, and workshops.
- Each day will feature a "sandbox" to explore teaching technologies hands on and in depth with staff assistance.
- Relax with a desktop yoga session or a trip to the "Speakeasy" after the sessions; enjoy UDairy Creamery ice cream or a mobile photo safari.

This year's theme—"Focused on Learning: Creative Teaching Solutions"—emphasizes how the student experience is shaped by teaching techniques in the classroom and online. As understanding of learning

expands and access to relevant technologies broadens, students are able to participate in their learning in diverse and effective ways.

Individual sessions will explore how to select among a range of teaching tools and techniques, how to build courses that are flipped and inquiry-based, explore the changing class "room," and the place for mobile technology in learning.

Find out more about Dr. Robbie Melton in an interview on *Campus Voices*, broadcast May 1 on WVUD.

In the episode she discusses her experience working with faculty trying to integrate new technologies in the classroom.

To register for the institute or read more, visit the Summer Faculty Institute Web site.

Open education

Information Technologies continues to support open education as an alternative to commercial learning materials. IT Academic Technology Services (IT-ATS) hosted Open Education Week at UD March 10–15 to increase awareness of issues related to affordability and flexibility of learning materials. Many local gatherings were added to the worldwide calendar of events.

To promote the reuse of locally created open educational resources (OER), we launched Open at UD. "Open at UD" is a directory of openly available learning materials created or curated by University of Delaware faculty and staff. Members of the UD community interested in exploring the use of OER (such as open textbooks), or who want to share open materials they created and want to find appropriate ways to promote them are invited to contact IT-ATS at ats-info@udel.edu or (302) 831-0640.

Business Systems

Oracle database access security

The Database Administration (DBA) team has been working with IT Network and Systems Services (IT-NSS) to tighten security for our servers and databases as well as access to the data stored on them. We are testing the use of firewall application software and redesigning and testing our networks for improved security without impacting performance. This is a gradual process that will eventually be applied in the production environment.

Separately, the DBA team is working on database security software solutions such as virtual private databases, database vault, encryption, and enhanced audit processes to strengthen the barriers to malicious activity.

The DBA team is also reviewing the enhancements to database security included in the latest release of the Oracle RDBMS software (Oracle 12c) and the April 2014 Oracle database software security patches. This latest version takes advantage of software that is currently separate from the standard components in the previous release and also provides enhanced performance. The security patches are typically released once each quarter. We will work out a schedule to plan for downtime to apply these patches.

UDSIS
- IT Management Information Services (IT-MIS), in collaboration with the Registrar's Office, has implemented XML transcripts. This change paves the way for automating generation and delivery of transcripts through the National Student Clearinghouse, where students are currently redirected to order transcripts.
- Interfaces have been implemented to send data from UDSIS to the new Student Housing System, StarRez, to administer student housing and dining services.

UD Financials

- The Financials group did a bundles upgrade in February, adding bundles 25-28. We were able to resolve small problems in the Purchase Order query and the Positive Pay configuration as well as bring our Oracle Financials software up to date.
- The upgrade of the Oracle "Tools" in student systems caused the HR and Financial groups to change the parameters for messaging in February as well.
- We started allowing for online MBA charges in the processing of Grad Contracts from Student Financials in February.
- We fulfilled a request to do automatic inactivation of unused vendors for the Procurement Office in March. In April, we also created a process to convert some vendor_ids from federal tax ID numbers to arbitrary numbers, creating a more compliant PII environment.
- We created a customized notification for Reimbursements a business day before they are to be paid, to give our employees time to correct the reimbursement. This was our April response to a request from Internal Audit to Procurement, and this "pre-notification" should help prevent errors.

UDataGlance Reports tab

Recently, several University offices, including IT Web Development (IT-WD), General Accounting, Research Office, and Office of Institutional Research and Effectiveness, collaborated on the development and deployment of the Reports tab in UDataGlance. This new tab, available as an option once you are logged into UDataGlance, provides consolidated information for reporting and access in a single location. It includes links and information on accessing UD Financials information as well as links to UD Financials Query reporting and to UD Financials information through Cognos. The form includes links to training and for requesting access through the Data Warehouse. A "Resources" section includes a link to the most current listing of UD Financials accounts and UDEW resources. A Dashboard is currently under development for the Data Warehouse section. This is an attempt to aggregate Reporting resources with other financial resources based on reviews that were conducted with the college business officers earlier in the year. You may send questions or suggestions using the "Feedback" form available within UDataGlance.

Chart Field String widget

Last month, the UD Motor Pool, in collaboration with General Accounting and IT-WD, updated the Motor Pool's request for service form to integrate the Chart Field String widget, a standardized mechanism to collect financial and billing information. The Chart Field String widget allows for the completion of funding information and most of the rules and validation of information to be consistent across all forms using financial information. It ensures that all relevant information, including grant-matching information where appropriate, is accurately validated. Centralizing the code in one location through the widget and calling it from all of our financial forms and applications will ensure easier and up-to-date validation within the widget itself.

This new functionality provides an opportunity to automatically populate or limit choices for chartfields, such as an account, if the account for that form is to be chosen from a limited set of values. In the next few months, we plan to add the Chart Field String widget on the Journal Voucher Web Form, where most campus clients will see it. (UD processes over 30,600 JVs a year.) Then IT-WD and General Accounting will work to update all forms and applications to use the Chart Field String widget. Questions may be sent to General Accounting at (302) 831-2175.

Consultant Disclosure form moves online

The Consultant Disclosure form has been moved from a paper process to an online Web Form. The individual who originates the Web Form can now track its progress without having to contact anyone in the Research Office. In addition, routing for approvals has been built into the form. The required approvals are the same online as on paper—purpose code approver, chair (as applicable), dean (as applicable), Contract and Grant Specialist (as applicable), HR, and VPR.

Of special note, consultants who are being paid from non-sponsored purpose codes will still use this form and it will be routed to the Research Office. The form will not be routed to a Contract & Grant Specialist

but to the Assistant Vice Provost and Vice Provost for Research for review and approval. Colleges or departments may require additional approvers, and the form provides the functionality to add them as needed.

Once all required individuals at UD have approved the form, the Research Office consultant disclosure coordinator will send the contract to the consultant for signature. Once the agreement is executed, the Research Office consultant disclosure coordinator will attach it to the form and provide final approval. The originator of the form along with any Contract and Grant Specialist, HR, and Procurement will receive notification of the completed form with the executed agreement attached.

When processing the Purchase Requisition Web Form to pay the consultant, please include the Web Form Req ID in the comments so that Procurement can reference the Consultant Disclosure Web Form to obtain the executed agreement.

The form has been tested, but as with all new processes, there may be a few adjustments that need to be made. If you have questions or issues with the form, please contact Trudy Riley in the Research Office at (302) 831-4978 or via email at triley@udel.edu. The Research Office and IT-WD will work to refine the form's functionality as needed.

GreenIT

Ultra compact low power computers (NUC)

When we started the GreenIT column about four years ago, an average desktop consumed approximately 300 watts—about 200 watts for the unit itself and another 100 for a standard LCD monitor. About five years ago, LED monitors came into widespread use and the power consumption for a flat-screen monitor went down by about 80%. Not coincidentally, battery life on laptop computers went from 2–3 hours in 2007 to nearly 6 hours in 2012. During the same time period, the amount of power consumed by the desktop units only decreased by 10-20%, though the machines themselves became 4–5 times faster.

With the newest (4th generation core) Intel processors, code named Haswell, the amount of power consumed by the actual processor (CPU) was cut nearly in half. The change in the processor alone extends laptop battery life from 6 to 9–10 hours, which is impressive considering other power consumers in the laptops. SSD (solid state) storage also contributes significantly to overall power savings, while boosting disk speed by as much as 1,000%. Along the same lines, the newer CPUs are significantly faster and have strong on-chip graphics support, up to 3 times as fast as previous generations. Thus, for applications other than 3D gaming, the CPU can handle graphics as well as eliminating the need for a stand-alone video card.

With all these advances combined, Intel released its third generation Next Unit of Computing (NUC) for desktop use. The NUC is a box approximately 4"x4"x1" that contains the motherboard, USB connections, speaker output, four USB ports, support for two high resolution displays, and space for an SSD (up to 1TB) and up to 32GB of memory. These units are extremely power efficient (6 watts at idle, 12–15 maximum) and, because they generate so little heat (wasted energy), they have no fan. They have zero moving parts and can be mounted to the back of a monitor. Low-end models can be bought for approximately $300. An i5 processor-based unit along with a 256GB SSD and 8GB of memory can be purchased for about $500 and comes with a 3-year warranty direct from Intel.

Event Production and Media Services

Video Production

IT University Media Services (IT-UMS) Video Production competed several high profile projects including the University's "Shape Up America" video, which was entered into the National Institutes of Health's Competition; UD Development's "Parents Fund" video; and a promo on the Confucius Institute.

The Video Production team also streamed all 18 home matches of the Delaware Men's and Women's Lacrosse teams. In addition, they will provide full multi-camera production services in support of the NCAA Men's Lacrosse quarterfinals from Delaware Stadium on May 18.

Performance Events

The IT-UMS Performances and Events unit supported 82 events in April with an additional 72 scheduled in May. Events ranged from full-scale theatrical productions such as I-Music in Mitchell Hall to large sound systems for performing bands during Ag Day, Rezapalooza on the Green, and Base Camp on the Laird campus.

Classroom Technology

IT-UMS Classroom Technology continued to support the 180+ classrooms on campus as well as completing 19 installations in departmental spaces. Current projects underway include the renovation of 025 Townsend Hall for the College of Agriculture and Natural Resources, Vita Nova, and phase two of 44 Kent Way (the former Blue and Gold Club).

Training Opportunities

Over the past three months, the Employee Education and Development team has created and offered numerous new training opportunities. One area of focus has been on UD Financials. Our approach is to create a series of sessions that will help staff conceptually understand the UD financial system and then learn to efficiently use the appropriate tools to access and analyze their data.

For example, we offer sessions on UD Financial Fundamentals, how to use UDataGlance, and then data analysis using MS Excel—making it easier to apply what participants have learned to what they're trying to accomplish on the job.

This is just one example of the growing number of sessions and resources offered by Employee Education and Development. Check the LearnIT@UD calendar for sessions available by date or search by topic.

We can help you choose the learning opportunity that's right for you or your department. Call (302) 831-4753 or send email to employeetraining@udel.edu. We're here to help!

IT Support Center

FootPrints upgrade

We upgraded the FootPrints incident management system to version 11.6.02. This upgrade fixes the problem of not being able to log in because the system reported that no licenses were available. Many individuals on campus encountered this problem. If you currently use FootPrints, and experience trouble logging in, please call the IT Support Center at (302) 831-6000.

XP computers

So far, the IT Support Center has offered assistance to the owners of 336 on-campus XP computers as part of the University's response to the announcement that Microsoft will no longer support the Windows XP operating system.

Heartbleed vulnerability

Approximately 180 incidents were created in the IT Support Center's FootPrints incident management system in response to the "Heartbleed" vulnerability. The Support Center's call volume was nearly triple that of the preceding week.

Personnel

New staff

Alex Coffman became a member of the IT-NSS unit as a Systems Programmer III (Security Analyst) in the Technical Security Group in mid-April. Alex comes to UD with over four years of experience as an IT Security professional working in the commercial side of the computing industry. He will work to ensure systems and network security for the central IT managed systems and networks.

Eric Eckman started working in IT-NSS in the Technical Security Group as a Systems Programmer III (Security Analyst) in April. Eric brings to IT-NSS more than 15 years of experience as an IT professional working in the College of Engineering. Eric will implement and administer security policy for the central IT managed systems and networks.

Gina Mayfield joined IT-NSS as an IT Security Analyst in the IT Security Policy & Compliance Group. Gina has over 10 years of experience in information security and comes to UD from Delaware Technical Community College. She will work to assess risks to University information assets and implement appropriate administrative, technical, and physical controls to comply with laws, regulations, funding agency requirements, and security policies.

Nora Wallace joined IT Client Support & Services (IT-CS&S) in May as an Administrative Assistant III. She supports the unit in financial and administrative duties. She is also the HR Liaison for the unit. Nora brings to CS&S her 10 years of experience from previous employment in the Facilities Planning & Construction and the University Architect Office at the University.

Retirees

At the end of April, three IT staff members retired from the University.

In IT-CS&S:

- **Nancy Allinger** (Administrative Assistant III) retired with over 27 years of service.
- **Ken Gillespie** (IT Resource Consultant) retired after 30 years of service.

In IT-MIS:

Paul Salindong (Associate Director, Database Administration) retired after 26 years of service.

And at the end of May, **Karen Kral** (IT Resource Consultant III) in IT-ATS will retire after 30 years of service.

We will miss them all and appreciate the many years of service they've given to IT and UD. Thank you, congratulations, and best wishes!