A faster, more wireless future

UCDNet3, a new 6-year plan, preps the campus telecom network for a lot more video and other needs ahead

Imagine if a local agency substantially improved the roads you drive on, the conditions you work in, the speed at which you travel, all at minimal disruption to you. That would be a pretty big deal.

Now think about upgrading the part of your work that involves phones, computers, and online connections, instead of cars or office lighting—and you have the gist of UCDNet3. It is a newly approved six-year plan to improve the shared UC Davis telecommunications system so that it works better, faster, covers more territory, and is ready to meet the burgeoning demand for research and online video, among other changes ahead.

"UCDNet3 culminates more than two years of planning by the leadership in IET-Communications Resources," said Dave Klem, CR director. "We focused on emerging and innovative technologies available to the campus, and integrated those components with a very structured business approach, to assure that the delivery of a new and sustainable network technology platform was technically and financially feasible."

"UCDNet3 says let's be prepared in two ways, as consumers and as producers" of data, said Mark Redican, manager of the Network Operations Center in Information and Educational Technology.

Over the next six years, UC Davis should gain a telecom network with more reliable electronics, better security, much faster speeds, an improved ability to identify and prioritize network traffic, and increased wireless coverage and systems. The network will quickly move the digital mountains of huge data files needed to support advanced research and high-definition video. As a critical initiative, it is proceeding even as IET's budget shrinks.

The Communications Resources group of IET spent much of 2007 developing the plan and presenting it to campus leadership, Redican said. With their approval in place, work has begun and will proceed through 2014.

UP FIRST: GUIDANCE, WIRELESS AND THE CORE

The initial steps include:

• Forming a telecom advisory committee with various representatives to help decide which services to focus on, as well as where the UCDNet3 network services should get built first. The group will advise Pete Siegel, vice provost for IET and campus chief information officer.

• Starting the expansion of wireless services, beginning with the replacement of old wireless access points with new Aruba

See UCDNet3, page 4

3-D ANIM ATION

Animated images help illustrate complex concepts. A flood of new software is kicking that ability up a notch on campus

Campus animator Bob Burnett clearly loves his work. He happily discussed all aspects of it during a recent interview, moving easily from the cooperative habits of 3-D animators, to the amped-up software created by new computer games, to the prototype of a simulated brewery that just helped food engineering professor R. Paul Singh win a federal grant.

Listen awhile, though, and it becomes clear not just that Burnett is the right guy for his job, but that UC Davis could easily see wider use of instructional animation in the years ahead, especially in 3-D. The stage is set:

• Animation software has grown better, cheaper and easier to use in the past few years. Innovations in 3-D film-making and computer gaming have created new tools that are excellent for manipulating images, Burnett said, "and they don't have

to be wasted on stealing cars and shooting people."

• Advances in classroom technology make animation easier for instructors and students to view and use. Faster Internet connections and brawnier computers make animation as simple to access as YouTube.

• Animation is a powerful teacher. Singh, a highly accomplished professor who was elected to the National Academy of Engineering in February, has been creating and using animations since the mid-1990s because they help his students understand complex concepts more easily, and remember them longer.

• Animation in 3-D is more powerful yet. "Physical sizes, dimensions and shapes which are difficult to express in a 2-D animation can be explained much easier in 3-D," Singh said. "Instead of taking a large problem and breaking it down into small

parts, you approach the large problem."

Three-dimensional animated simulations even let you enter the large problem, potentially understanding it better as you go.

(These images aren't 3-D in the sense that viewers wear special glasses and see objects floating in air. These are on-screen images that convey depth, as well as height and width. The result is more like a Pixar movie, as opposed to classic Disney.)

Burnett, Jeremy Cooke and Armando Arbizo make up the animation group in the Academic Technology Services area of Information and Educational Technology. They have created animations for instructors at UC Davis in the sciences, medicine and the humanities, for subjects ranging from plant roots and eye anatomy to digestion, blood vessels and museum exhibits. Their output ranges from simple 2-D

See 3-D Animation, page 2

Photo: Sam Woo

Bob Burnett, stylus in hand, works on a 3-D model at his desk in Surge II.

The BrewSim prototype, by R. Paul Singh, developed by IET-Academic Technology Services' animation and programming groups.

IET reduces budget by $1.46 million

Information and Educational Technology, shouldering its share of the UC Davis spending cuts required for 2008-09, has decreased its budget by $1.46 million.

To meet this target, IET identified reductions based on the best interests of the campus and an attempt to preserve core services for faculty, staff and students.

"We took a risk-assessment approach, and focused on preserving programs and services critical to faculty, students and staff—and protecting initiatives such as SmartSite and UCDNet3, the six-year upgrade to the campus telecommunications network," said Dave Shelby, assistant vice provost for IET.

Nevertheless, the IET budget reductions represent difficult decisions, and include curtailing and eliminating some services.

"We had to reduce a number of programs, which will unfortunately have a significant impact on the campus," he said. "This challenge was made all the more difficult by the magnitude of the campus's budget reduction and the increasing reliance on information technology by virtually all parts of the campus."

The current plan would cut the equivalent of about 13 full-time jobs, ranging from assistants to senior managers. Other savings would come from streamlined administration and renegotiated vendor contracts. Some cuts are expected to be immediate, while others will need to be implemented over a longer period to ensure an orderly transition and, hopefully, help ease the impact on faculty, staff and students.

Reductions in staff positions are expected to affect services or increase response times in various areas. Examples from the current plan range from programming and software licensing coordination, to photo and special events services, night crew tech service and classroom repairs, and phone bill administration.

IET's plans are available to the campus community. This consultation process started May 12 when the Campus Council for Information Technology heard IT-related budget-cut presentations from IET and other campus units. IET shared a list of measures it proposes to implement, starting as early as July 1.

"We are well along in the process of sharing and reviewing the anticipated impacts of the proposed cuts with key campus groups," Shelby said. "Although the timing did not allow for the kind of extensive consultation we would prefer, we are committed to fully understanding the impacts of the IET reductions. We know that many of the cuts will have significant impacts on the campus, and we are committed to fully understanding these impacts so that we can move forward in the most thoughtful way possible."

These reductions come amid general concern about lessening investments in technology, and reduce IET's capacity to develop new services or keep pace with the level of support the campus expects and deserves. "Much of the $1.46 million represents resources that IET would have redeployed to help address those needs," Shelby said.

Overall, UC Davis has asked deans, vice chancellors and vice provosts to pare general fund and registration fee fund spending by more than $17.5 million. The campus will also assign additional one-time cuts of $10 million to $20 million to fully close the expected gap for 2008-09. ∎

READ MORE:

See more about IET's budget reduction plans, including a summary of steps IET proposes, at vpiet.ucdavis.edu/budget.cfm. It will include information on tech-related cuts made by other parts of campus, as provided to IET.

3-D Animation *(from page 1)*

animations to 3-D simulations.

A vascular animation that Burnett and Cooke created with a neurologist at the UC Davis Medical Center earned Burnett and Cooke an invitation to a national medical illustrators' conference this summer, where they will demonstrate the animation and how they made it.

Their most recent work includes BrewSim, a "prototype for a brewing simulation" created by Singh and Burnett. It's only in its early stages, but could lead to bigger teaching simulations for a wider range of food-science students—a typical example of where educational animation might be headed.

COME ON, LET'S BUILD A FERMENTER

BrewSim would let students equip or manipulate a 3-D representation of a brewery. It would be an advanced game, basically, with interactive master and apprentice levels that offer students different things to do. Students could create some of the simulations as projects with other students, Burnett suggested. Engineering students could be assigned to create a fermenter.

Singh and Burnett chose beer because the campus has a brewery they could model.

"We are still building it," Singh said in April. "We showed some parts to students in winter quarter, and got some good feedback."

Parts of BrewSim were shown to two groups of students for a survey overseen by Leslie Madsen-Brooks, coordinator for faculty and teaching assistant programs in the Teaching Resources Center. Ninety-two percent of the students had played computer games; nearly half said they had played several types of games, for more than 100 hours total. Most agreed that simulations are best for "allowing us to do and see things that are too large, small, slow, or fast in real life."

"There isn't much to the BrewSim yet, so the students didn't have too many comments about the BrewSim itself, except that they really seemed to want a point of view other than 'first-person shooter,' " Madsen-Brooks said. (The term refers to games presented from the player's perspective; it doesn't have to simulate weapons.) "They seemed to like the idea of having a virtual brewing lab, because it might decrease the amount of time they spent in labs waiting for chemical reactions to take place."

Singh also received good notices from the U.S. Department of Agriculture Higher Education Challenge Grant Program. In early May, it awarded him $142,134 to develop educational games based on food processing. The BrewSim prototype was part of his project application. The project will develop brewery, dairy and tomato cannery simulations, his application said, increasing the supply of "innovative and highly engaging instructional materials for all food science programs."

"We are developing [BrewSim] as a game," Singh said. "You are learning something, but also you are being kept engaged in the process. You are challenging yourself, or working with partners or someone else and challenging each other. There's considerable more learning going on in this process."

"Long term I'd like to have a simulation of various food-processing plants that we can use in our teaching, at various levels," he said. "Elementary at the freshmen level, and bringing in more complexity in physics, biology and so on, for different levels up to senior. And then once we have created that virtual plant, we can go to another operation, such as dairy, winery or canning."

> **"You are learning something, but also you are being kept engaged in the process . . . There's considerable more learning going on in this process."**

"A lot of collaboration can be done with this," Burnett said, "and it doesn't just have to be computer science students."

VIRAL MARKETING

The cost of making an animation, Cooke said, depends on what an instructor wants to do. But creating animations takes less money and time than it used to.

Powerful 3-D modeling programs sell for a few hundred dollars. They include Blender, Silo, Google SketchUp, Cheetah3D and ZBrush. Adobe's Photoshop and After Effects, and Autodesk's Maya, are available at educational discounts.

At the Association of Medical Illustrators conference this July in Indianapolis, Burnett and Cooke will show how they used Autodesk Maya to create the vascular animation for Dr. Charles DeCarli, as well as demonstrate Unity 3D, used to make games and simulations.

Burnett said animators can help instructors learn to use the software. "We'll kind of bootstrap them along. We'll be helping other people do it themselves," he said. "You can learn it yourself."

Burnett said the IET-ATS Programming Group—in particular, Earl Schellhous and Simon Dvorak—contributed greatly to the BrewSim project. Group manager Charlie Turner said IET-ATS intends to keep increasing its expertise in gaming technologies as they pertain to educational applications, especially simulations. Multiple grants to fund this type of work have made it possible.

Cooke, who also works in video for IET, estimates that the animation group has done ten to twenty 3-D animations on campus in the past few years. Sometimes they're part of videos, he said. More than half of the unit's animation work is now in 3-D.

Instructors approach their unit for a variety of reasons. Typically they investigate animation as a spinoff of graphics, video or other more traditional work they have already done, Burnett said. Cooke said they also get word-of-mouth references.

"Someone sees something, they talk to someone," Cooke said. "The way we work is viral."

They have been showing samples of their work to various campus groups. Burnett and Liz Gibson, director of IET-ATS, demonstrated 3-D animation to the Campus Council for Information Technology in March.

GOOD THING WE DIDN'T ASK IN 2005

So, what would Singh tell other faculty about 3-D animation? Where is it strong, where is it weak?

"A few years ago I would have said it was hard, slow, and the software was somewhat more complicated," he said. Singh likes to share his work over the Internet, so other people can use it and offer feedback that improves his material. "The previous programs weren't good for that. The learning curves were longer. Computers would crash."

"It's much, much better now, which reduces the cost," he said. Instructors can use the shared information created by computer games the last two years, "sometimes for zero cost. Our interest is more pedagogical, but we can draw on that."

"In my own teaching, in terms of making things more effective," Singh said, "animation is worth the time." ∎

VIEW A SAMPLE:

This story, of course, can hardly be told without visuals. To see the sample animation movie created by the IET unit, go to ats.ucdavis.edu/programming.cfm. To learn more about the program, contact Burnett at (530) 754-5617 or rjburnett@ucdavis.edu.

New guidance

Committee with faculty, staff and student m

The campus has created an oversight committee to help guide the growth of SmartSite, the main campus system that faculty, students and staff can use to teach, research and collaborate online.

SmartSite finishes its first academic year as a full system in June, and it has attracted significant use. Since last summer, faculty have created more than 1,600 course sites using the service. The Provost's Office also used the system to create a budget planning site to share information and comments about how the California budget deficit is affecting UC Davis.

Pete Siegel, vice provost for Information and Educational Technology, appointed the SmartSite Oversight Committee to help make important decisions coming up, including when to retire the MyUCDavis course-management tools that SmartSite will eventually replace. The members represent a cross-section of faculty, students and administrators. Its co-chairs are two faculty members.

The committee will help direct the transition from the MyUCDavis course tools to the SmartSite course tools, said Susan Keen, co-chair of the committee. She is a lecturer and academic coordinator in the Evolution and Ecology Section of the College of Biological Sciences.

Various options exist for developing tools and timing the different parts of the changeover. Each option has costs and benefits, she said. "Not everything can be done at once."

The aim is to provide strong functional tools for as many users as possible during the transition.

The committee, which first met in mid-April, has five goals, to:
• Advise Siegel.
• Develop a long-term roadmap for SmartSite.
• Develop recommendations concerning immediate and short-term issues, opportunities and priorities.
• Consult with various campus groups to get their comments and agreement on issues.
• Regularly present its recommendations and findings to the Campus Council for Information Technology, which helps steer overall IT decisions for the campus.

Other changes ahead this year include the latest upgrade to the Sakai software that powers SmartSite, and improvements to the SmartSite Gradebook tool.

MYUCDAVIS WEB PORTAL IS STICKING AROUND

The course tools available through the MyUCDavis Web portal had been scheduled for retirement this fall, but that has changed. The retirement will be influenced by improvements in the Gradebook tool in SmartSite. Until that feature works at least as well as the comparable MyUCDavis Gradebook tool, the MyUCDavis course-management tools won't be discontinued. (Faculty will have at least one year to make the transition once the new Gradebook is available.)

The older tools need to be retired because SmartSite has more features, better flexibility, and will be easier to expand as UC Davis grows. At some point, the ability to create new course sites using the MyUCDavis tools will be removed. But past MyUCDavis course
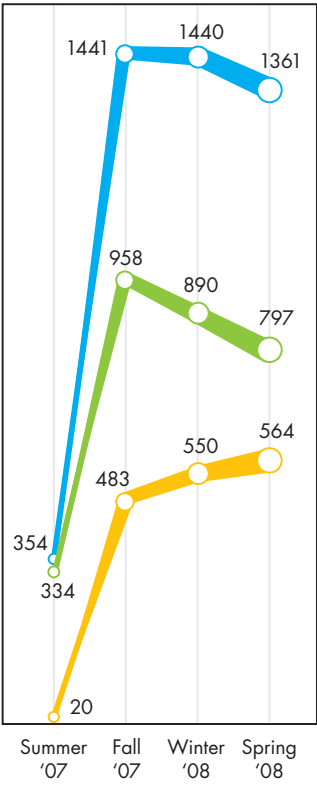
ELECTRONIC COURSE MANAGEMENT GROWS
Number of course sites created in 2007-08 using the tools in MyUCDavis (green) and SmartSite (yellow). The blue line represents total sites created.

(Chart data: Summer '07 — 1441 (blue), 354 (green), 20 (yellow), 334; Fall '07 — 1440, 958, 483; Winter '08 — 890, 550; Spring '08 — 1361, 797, 564)

Follow-up report sets bold goals for UC Davis inform

For UC Davis to support advanced research, and to build its reputation as a center of innovative teaching, scholarship and engagement, it needs more computing power, network access, data storage, and other components of a healthy cyberinfrastructure. A new report, enlivened by bracing language, offers ideas on how to get it.

The "Chancellor's Fall Conference Action Plan Committee Recommendations," which expands on work begun at the chancellor's conference on information technology in Lake Tahoe last September, presents four suggestions to:
• Enhance the campus IT commitment to research infrastructure.
• Enhance the campus commitment to educational technology.
• Support campus IT infrastructure for outreach and engagement.
• Establish a method to set ongoing priorities for campus needs in IT.

Pete Siegel, vice provost for Information and Educational Technology, appointed the 10-member committee last Oct. 30, asking it to develop a concise, five-year vision, including specific goals that could be substantially achieved within a year.

Bernd Hamann, associate vice chancellor for research and a professor in computer science, chaired the committee. The main value of the report, he said, is that it presents ideas that should let UC Davis keep growing in stature in a time

when scholarship and teaching "increasingly depend on having access to the latest in information technology."

"The report," he said, "illuminates a path."

CLEAR CALLS FOR ACTION

The 13-page report elaborates on ideas in each of the four areas, and declares that basic cyberinfrastructure—including high-capacity data storage and archiving, high-speed networks available to desktop computers, and systems that support long-distance collaboration—"should be viewed as infrastructure, much like electricity, telephones and buildings."

The committee calls for UC Davis to become internationally known for developing and using information technologies to support innovation and excellence in teaching, scholarship, and engagement.

The report also presents a new framework for addressing critical computing and data infrastructure and service needs, and draws attention to key academic issues—such as collaborating across disciplines, sharing information, assessing and setting priorities, and innovating. "All are essential to our ability to grow and excel as a research university increasingly dependent on computing," Hamann said.

"Our campus [needs] to consider IT investments in bold terms," the report says. "The level of investment in campus cyberinfrastructure needs to be substantially higher than it is now."

The report suggests that different departments lead

the work on different parts of the plan. It recommends that Student Affairs, for example, lead an effort to determine what role social networking IT has in student culture, and to identify activities that engage social networking technologies to benefit students.

The Office of Research and IET would lead or co-lead several initiatives.

Last year's chancellor's fall conference addressed IT as a vehicle for innovation at UC Davis. The committee developed its report based on issues and recommendations discussed at breakout groups during the conference. It also met several times on campus after the conference ended.

And in spring 2007, Siegel and Barry Klein, vice chancellor for the Office of Research, sponsored a two-day campus workshop on cyberinfrastructure. Those discussions also helped raise the issues addressed in the report.

Besides Hamann, the members of the Action Plan Committee and their respective areas are Francois Gygi, Applied Science and chair of the Campus Council for Information Technology; Mike Hogarth, Internal Medicine and Academic Senate Committee on IT; Carolyn de la Pena, Davis Humanities Institute; Susan Keen, Evolution & Ecology; Louise Kellogg, Computational Science; Kareem Salem, president of the Associated Students of University of California, Davis; John Wesson, graduate student (School of Veterinary Medicine); and ex officio members Babette Schmitt and Siegel, both of IET.

for SmartSite
members helps advise further development

materials, resources and grades will be available to faculty, for a period of time, and the MyUCDavis portal itself will continue.

"Some of the MyUCDavis course tools work very well, but others are clunky and unsuited to the needs of many users," Keen said. Many courses have supplemented MyUCDavis course tools with other materials, but "the new system provides a one-stop-shopping site."

And the open-source collaboration behind SmartSite—Sakai is developed and supported by a group of about 100 universities and colleges—lets the campus capitalize on tools created at other campuses, Keen said. "We can use things we might never have imagined making on our own."

UPGRADE AND GRADEBOOK

The SmartSite upgrade to version 2.5 of Sakai, scheduled this summer, will fix bugs, improve the user interface, and resynchronize SmartSite with the Sakai code base to help prepare the way for future upgrades and maintenance patches.

The primary goal this year is to improve the Gradebook tool in SmartSite, which instructors use to record students' grades. There will be seven major upgrades in Gradebook, including three of the most commonly used functions that allow instructors to drop a student's lowest grade, exclude an assignment from grading, and creating equal weighting for assignments within a category of work. The committee is also looking at two other development priorities—a content player and online course evaluation (an optional module)—in collaboration with the SmartSite project team. ∎

READ MORE:

Several stories in the IT Times, TechNews and Dateline have reported the evolution of SmartSite since it started as a pilot program in 2006. For more information, go to smartsite.ucdavis.edu, or search the archives at technews.ucdavis.edu or dateline.ucdavis. edu. Send questions or comments to smartsite-help@ucdavis.edu.

THE SMARTSITE OVERSIGHT COMMITTEE:

Co-chairs:
CAROLINE BLEDSOE:
Senate Faculty Member, Liaison, CCFIT-Educational Technologies Workgroup
SUSAN KEEN:
Federated Faculty Member

Members:
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IET, SmartSite Program Manager (ex officio)
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GAIL YOKOTE:
Senior AUL – Sciences, University Library

The co-chairs welcome questions or comments about the committee. Write to Susan Keen at slkeen@ucdavis.edu or to Caroline Bledsoe at csbledsoe@ucdavis.edu.

nation technology

NEXT STEPS

In the months since the committee began its work, the campus has come to better understand the size of the budget reductions UC Davis faces. Even so, the committee identified important issues that require the campus's attention, such as the need for data center space. And it urges the campus not to put "big ideas regarding innovation and creativity" on hold.

"These are the very times to rethink our investments and priorities," the report says, "to ensure that every resource is effectively used in fulfilling our common vision."

Key work in specific areas relating to infrastructure will continue on several fronts. Specific timing for broader aspects of the plan will be determined at a more opportune time for the campus, following further discussions this fall.

The draft report is posted on the IET Vice Provost's Web site for public review. It was presented to the Campus Council for Information Technology (CCFIT) and shared with the Council of Deans and Vice Chancellors in May. Questions and comments are welcomed at vpiet-info@ucdavis.edu. ∎

READ MORE:

Find the report at vpiet.ucdavis.edu/fallconference.cfm. Also search the TechNews archives for "How Much Do We Need?", about the campus demand for more cyberinfrastructure in the spring 2007 IT Times.

CAMPUS TECH*Wrapup*

NEW INTERNET TOOLS CD, COMPUTER ADVICE

Two preparations for the fall are in place or will be soon: the update of the Internet Tools CD, and the yearly update to recommended computer configurations, mostly for students.

The CD, free to faculty, staff and students, is available now. It includes the latest versions of Sophos Anti-Virus and EndNote bibliographic software, plus security tools to help keep computers safe when online. Get a copy of the CD at the IT Express Help Desk in Shields Library, or download the software from my.ucdavis.edu/software. If you have questions, please email software@ucdavis.edu.

The computer recommendations describe the configurations for laptops and desktops, either Apples or PCs, that work best in the campus's computing environment. Information and Educational Technology works with the campus technical community to update the recommendations each year. Students are advised, for example, to choose laptops over desktops, and to check with their school or college to find out if the school or college has specific recommendations or requirements for computers.

The latest recommendations should be ready before summer. Read more at computerownership.ucdavis.edu; send questions to software@ucdavis.edu.

TEACHING AND TECH INSTITUTE MOVES TO SEPTEMBER

This year's Summer Institute on Teaching and Technology, a week of talks, seminars and workshops primarily for instructors and graduate students, will meet in September.

The program has met in July for several years, but the switch to Sept. 8-12 should help open SITT to people who aren't on campus in midsummer, said University Writing Program lecturer Andy Jones, coordinator for the institute. "We hope that the September start will especially attract faculty whose children will be back in school by then," he said.

Previous sessions have covered subjects ranging from wikis and SmartSite to copyright issues and interactive online mapping. "Other topics that we're investigating for this year include inquiry-based learning, problem-based learning, and faculty uses of third-party applications," Jones said, "such as YouTube, blogs, Google Docs, and others."

> **"Other topics that we're investigating for this year include inquiry-based learning, problem-based learning, and faculty uses of third-party applications."**

"This year's SITT also will include a cluster of sessions for helping both TAs and faculty members understand how to manage SmartSites in teaching classes, and how to move content from existing MyUCDavis course sites into Smart-Sites," said Kirk Alexander, SmartSite program manager.

Lunches and breaks offer participants a chance to network with instructors from other disciplines. About 120 people registered for SITT 2007. The institute is sponsored by the Teaching Resources Center, which will post details of SITT 2008 at trc.ucdavis.edu/trc/sitt/. For more information, or to suggest topics, contact Jones at aojones@ucdavis.edu.

MYINFOVAULT UPGRADE LAUNCHES JUNE 30

On June 30, Academic Personnel and Information and Educational Technology will roll out the newest version of MyInfoVault (MIV), a system that creates faculty digital dossiers to support academic promotions and merit actions. The upgrade has improved the overall architecture and functionality of MyInfoVault, and users will also notice an enhanced, more intuitive look and feel.

Once the new version is launched, the CV and NIH Biosketch features will be temporarily inaccessible. The project team will upgrade and release these features in the fall.

Schools and colleges representing 125 departments and 3,100 accounts use MIV, and they have provided important feedback as the MIV group developed the upgrade.

To learn more, and to stay current on features and upgrades planned for the future, visit myinfovault.ucdavis.edu.

INTRUSION PREVENTION SYSTEM STOPS BAD CYBER-TRAFFIC

Earlier this year, as part of ongoing efforts to protect the campus from cyber-security attacks, Information and Educational Technology integrated an intrusion prevention system (IPS) into the campus computing network. An IPS not only detects malicious traffic, but also prevents it from reaching its intended destination.

The campus IPS works by using a set of filters that check billions of pieces of network traffic per second for characteristics that are typical of attacks that target campus Web sites, servers, computers and other devices that connect to the network. Some filters check for attempts to exploit vulnerabilities in applications that reside on computer systems. When malicious traffic is identified, the IPS prevents the traffic from traveling any closer to its target, protecting the campus network from thousands of attempts per day to harm the network or devices on the network.

Since its implementation in winter quarter, the IPS has blocked hundreds of thousands of pieces of malicious traffic per week. Nearly all originated off campus.

Like any security measure, the IPS cannot prevent all attacks, so the campus encourages people to continue to install security updates, run an anti-virus program and protect personal identity information. For more information, see security.ucdavis.edu/cybersafetybasics.cfm.

ENABLED VOICEMAIL ROLLS OUT

On May 8, the Communications Resources unit of Information and Educational Technology made Enabled Voicemail (EVM)—a new, free, optional feature—available to anyone who has a campus voicemail account. EVM sends voicemail messages to a user's email inbox, where he or she can play the messages as audio files. Users may also receive text messages on their cell phones notifying them when the voicemails come in.

The goal is to offer users increased access to their campus voicemail, and greater ease of use when checking their messages, by creating access to those voice messages through email. If you don't use EVM, your campus voicemail will work the same as always.

Dateline and *TechNews* carried articles in May outlining the new feature. Learn more or sign up at evm.ucdavis.edu. ∎

The latest campus directory, produced by IET-Communications Resources (cr.ucdavis.edu), is now out. It's one of the first campus publications to highlight the upcoming UC Davis centennial.

IET sponsors successful Gmail pilot for students

Information and Educational Technology (IET) launched a pilot with students in mid-January to test Gmail, Google's email service, as the campus email program for students. The feedback was strongly positive.

More than 300 graduates and undergraduates participated in the six-week pilot, which included two surveys. Both received high response rates (73 and 82 percent, respectively). Each survey asked the students if they would recommend the UC Davis Gmail service to their friends; more than 90 percent said they would after the first survey, and that number grew to just shy of 94 percent at the end of the pilot.

In a comments section, one student wrote, "the storage space is excellent, the search mechanism in which I can quickly find specific emails is convenient, the chat feature is interesting, and the simple format is visually appealing."

On April 10, the Senate of the Associated Students of the University of California Davis unanimously approved a resolution "recommending the implementation of the UC Davis Gmail program."

The Campus Council for Information Technology, Gmail pilot advisory group, and other groups have reviewed or been updated on the pilot this spring; IET expects to have a decision on possibly expanding the service to all students later this year. Learn more at gmail.ucdavis.edu. ∎

UCDNet3 (from page 1)

components (reported in the winter 2008 *IT Times*). Technicians are already installing the Aruba gear. Among other pluses, the Aruba points are centrally controlled, and can automatically adjust to compensate for lost coverage if a point fails.

• Upgrading the campus data core this summer so that the core equipment is ready to handle growing data demands from other areas of campus.

UCDNet3 represents the latest version of the campus telecommunications system. Earlier ones were known as UCDNet, Network 21, and UCDNet2. UCDNet3 supports the campus goal of investing in the people and infrastructure needed to position UC Davis as a pre-eminent research institution. It also addresses most known and emerging requests for functions and services on campus.

Redican, who graduated from UC Davis in 1985 with a degree in electrical engineering, consulted on or helped design the existing networks. He has managed the Network Operations Center since May 2004, and is heading the UCDNet3 project for IET.

VIDEO USE IS MUSHROOMING

Redican lists several areas where faculty, staff and students will see improvements to the network in the next several years:

• **Gains in high-performance computing.** Computer users will get faster access to servers, even as they work with larger files and data streams. "You'll see a network better able to support use of video and other real-time services, without it being problematic," he said.

That support will be critical to researchers who need quick access to huge data files and interactive projects.

The plan also anticipates a growing use of video. The biggest single service consumed on campus today is You-Tube, Redican noted, primarily because of demand coming from ResNet, the network that serves students' on-campus housing.

• **Better equipment.** The important point here is that the new equipment will add capacity and redundancy. "Reliability is a big issue," he said.

• **Convergence.** "This is really about the telecom world moving to using IP as the transport mechanism," Redican said, and away from older, typically analog equipment.

"IP" refers to Internet protocol, or the way data moves over the Internet between two points. VOIP, for instance, means "voice over Internet protocol," or sending phone calls over IP-based data networks instead of over traditional phone lines.

Communications Resources is also preparing for an IP-based PBX (telephone switching system). It's doing some tests now, Redican said, "so it can pull the trigger when ready. That's down the road a ways." An IP-based telephony system could let the campus run its phone system over a wireless network.

• **Mobility.** As portable devices like iPhones grow in popularity and add functions, telecom access is increasingly mobile, and "Quality of Service" (QoS) becomes vital. Communications Resources plans to be ready.

The term refers to a network's ability to identify and prioritize types of traffic, rating it on a scale of 0 to 7, so that high-priority material sent over the network flows smoothly and reliably. Phone calls are a high priority, to prevent dropouts.

• **Speeds and capacity.** The campus network will support a tenfold increase in data speeds by 2014, Redican said. Some places will get the upgrade sooner, depending on need, with the core coming first.

The faster speeds are critical as demand for network capacity increases.

Today, if someone wants to download a 90-minute movie over the campus network, the data pipeline usually has room. But demand for capacity is expanding—video use is mushrooming online, Redican said—and so the size of the pipeline needs to increase. Otherwise you get a traffic jam, like on a freeway at rush hour.

The amount of downloadable content is growing much larger every year, and the use of data streams is increasing. Widening the pipeline will also boost the campus's ability to receive high-definition video streams, as well as provide such content to consumers outside UC Davis.

WILL WORK WELL WITH OTHERS

The work envisioned in UCDNet3, Redican said, will also match upgrades done by the advanced networks run by Internet2 and CENIC. (CENIC stands for the Corporation for Education Network Initiatives in California; it runs CalREN, a large, fast Internet network designed to serve education and research. Internet2 is a nonprofit advanced networking consortium.) That will help the campus network mesh with the larger networks.

"We're also trying to position ourselves for future optical services," Redican said.

CR Director Klem said the real success in UCDNet3 is "the delivery of new products and services that will support our campus constituents. But the behind-the-scenes success is a credit to a core group of CR staff who put all the technology, funding, and business elements together in a way that made the need for these investments clear."

If all goes according to plan, most people at UC Davis shouldn't notice the work. Just the improvements.

"Much of this work will be invisible to users," Redican said. "They should just see better results, and that the system is growing with demand." ■

GSM builds a high-tech hall

Visitors to the area known as the front door to UC Davis in early April may have noticed something striking, next to the Robert and Margrit Mondavi Center for the Performing Arts and the Buehler Alumni & Visitors Center: a gigantic hole in the ground.

In a little over a year it will become one of the most technologically advanced buildings at UC Davis.

On Dec. 7, ground was broken on Gallagher Hall, the new home for the Graduate School of Management. The building is supported by the largest-ever gift from a UC Davis alumnus—$10 million from 1971 graduate Maurice J. Gallagher Jr., CEO of Allegiant Travel Co. of Las Vegas. With construction under way, the three-story, 40,000-square-foot building is expected to open in fall 2009. A conference center is being built next door, and a 75-room hotel behind the complex will follow not long after.

Photo: Phil Long
Earlier this year, workers placed coils that will help heat and cool Gallagher Hall.

The new building includes state-of-the-art technology inside designed for easy use and interactive learning, said Chip Mrizek, information technology director for the nationally ranked school.

SMART LECTERNS AND PLASMA-SCREEN GREETINGS

Gallagher Hall will have three classrooms that seat 40 people each, plus one large classroom that seats 75. The centerpiece of each classroom will be the "smart lectern" podiums that feature a computer for presentations; a document camera; connections for auxiliary components, such as laptops and iPods; and a touch screen to control the media system.

The touch screens are designed to be sophisticated, but simple for users.

"Programmers can build multiple functions into simple controls," said Derald Reedy, the multimedia design technician for Information and Educational Technology's Academic Technology Services unit who helped outfit Gallagher Hall. "For example, if a lecturer presses a button saying 'show DVD,' the settings for dimming the lights, drawing the shades, and actually playing the DVD will all activate at once."

A large conference room will have a plasma screen television facing the conference table, controlled by a wireless touch panel. The screen will be able to access satellite and cable television.

The entrance to the building will have an interactive plasma screen to display greetings, announcements, and information about events.

Gallagher Hall might well feel like a second home to MBA students because of the time they will spend there. The design uses open spaces to encourage a sense of community and collaboration. The student lounge will have showers, satellite and cable TV, and space to study, network or relax. The result, Mrizek said, should help create a first-rate learning environment.

FUTURE-PROOFED, REMOTELY DIAGNOSED AND CELL-PHONE FRIENDLY

The design also supports remote diagnostics and control. Technicians will be able to remotely access the audio/visual systems in each room to check their status. That even includes checking a bulb in a classroom's projector to see when it needs to be changed, Reedy said.

Technicians can track which programs or tools instructors use most, using the data to help them focus their support.

Information and Educational Technology will provide technological infrastructure. Wi-fi and cell phone service will be available throughout the building and in the courtyard areas. (Complete cell-phone coverage inside a building is rare on campus, although that's changing. "We are planning and designing full-coverage deployments throughout the campus," said Diane Bahr, the head of Engineering and Construction Management area of IET-Communications Resources. "This building will be an early adopter.")

The design of Gallagher Hall was "future-proofed" to support technology the school might find useful down the road. The classroom touch screens, for example, can be re-programmed. The remote access will help managers see which programs instructors and students use most, and need updates or changes.

"We will have wiring and raceways in place for future capabilities," Mrizek said, "and we picked equipment that can support more capabilities than we'll use right now." ■

READ MORE:
Visit www.gsm.ucdavis.edu/gallagherhall for more information, a live web cam, and time-lapsed video of Gallagher Hall construction.

Researching IT? Check Gartner for free

Any instructor, staff member or student at UC Davis can tap into a wide range of valuable IT research done by Gartner Inc., a leading technology research and advisory group. Information and Educational Technology has renewed the contract allowing this access, and is starting a broad informational campaign to further highlight the service.

IET and the Office of Administration have collaborated to cover the cost of the contract as part of their commitment to invest in services and information that help faculty, staff and students learn from others and keep pace with developments in technology. This spring, when the Gartner contract was renewed for a year, Jeff Barrett, technology liaison between IET and the OOA, was asked to spread the word about Gartner and evaluate how people on campus employ the service.

Current users find the research valuable, Barrett said. Historically, individuals from OOA and IET have accounted for most of the use of Gartner resources; however, the searchable database includes thousands of articles covering more than two dozen major subject areas, from application development and enterprise architecture to process management and regulatory compliance. Specific report titles include "Key Issues for Education 2008," "The Evolution of Mobile Music," "Cost Cutting Initiatives for Office Printing," and "Virtualization Changes Virtually Everything."

Customers can read the material online or download copies.

"The Gartner information has been useful to track trends," said Pam Davis, computer support manager in the School of Education. "When the school was formed, I read the Gartner information on technology spending. It helped me set and justify a technology budget. I've used their advice to justify a computer replacement policy."

Davis said she has alerted some graduate students in the school to the Gartner data. "It has some research information on technology used in education and other industries that I think they'd find useful."

To gain access to the Gartner research, request an account from Kathleen Beyer, executive assistant in the Office of the Vice Provost of IET, at kmbeyer@ucdavis.edu. Barrett said the campus plans to allow access through the MyUCDavis Web portal, so that anyone with a Kerberos password could see the material without having to go through someone else to create an account first.

Discussions with Gartner consultants are also available on a limited basis through the IET office; to learn more about that feature, or other aspects of the service, contact Barrett at jtbarrett@ucdavis.edu or (530) 754-5666. ■

ALSO AVAILABLE:
Educause, a nonprofit, also offers free materials that include publications, Web seminars, presentations, effective practices, discussion groups, conference materials, and a searchable library, on subjects ranging from cybersecurity and networking to the law and teaching. For more on Educause and other resources available to UC Davis faculty, staff and students, visit vpiet.ucdavis.edu/campus_subscriptions.cfm. Send questions or comments to vpiet-info@ucdavis.edu.