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PUBLICATIONS

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Quote of the Month

"The legislature, by granting this award, had the foresight to invest in an opportunity that allows us to examine - in a serious fashion - the result of information technology on people and on society as a whole." --Ruzena Bajcsy, director of CITRIS, on the vote by the State Legislature to fully fund the four California Institutes for Science and Innovation.

CENIC News

New Issue of InterAct Now Available
This month, CENIC released the new issue of InterAct, a magazine devoted to the advanced-services network applications being developed in California. The articles in the new issue of InterAct highlight the many uses of the CalREN infrastructure for network experimentation, basic research, learning, professional development and training. From delivering Advanced Placement courses to 53 of 58 counties to ensuring the well-being of astronauts during their long International Space Station missions, these applications demonstrate that there truly are no boundaries for the uses of robust networks that advance the research and education missions and programs of all California institutions.

Volume 2 can be downloaded online at http://www.cenic.org/InterAct.html. To request a hard copy of the magazine, please email editor@cenic.org .

ONI Progress Report
At the December 2001 CENIC Board meeting, approval was given to begin negotiations with providers selected for potential CalREN-DC (Digital California) and CalREN-HPR (High Performance Research) backbone fiber and wave services. Since that time, the telecommunications industry's well-publicized financial problems have caused CENIC to re-assess some decisions about backbone service providers and design details, while providing further opportunities as prices for fiber and for wave services have continued to drop.

Despite these changes, ONI continues to move forward. CENIC has reached agreement with SDSC and the other participants (NPACI, Argonne National Labs, I-Wire, and CalTech) in the TeraGrid research program (www.teragrid.org) to transport four OC-192c (10 Gigabit/second) waves from the Qwest Los Angeles POP to SDSC over the first segment of the ONI to be activated. Initial TeraGrid service is targeted for June, 2002.

A contract has been signed with Level 3 for purchase of a fiber optic cable path between LA and SD. CENIC is negotiating a contract for the Wavelength Division Multiplexing (WDM) equipment that will 'light' that fiber, and has reached agreement with Pihana Pacific on the lease of carrier-neutral space in downtown Los Angeles to house ONI, TeraGrid and SDSC equipment.

At the same time, work has continued on finding and/or refining solutions to "last mile" construction problems. Individual campuses have actively participated in identifying possible paths and vendors for installation of fiber cabling to their sites. With that support, the problem areas and uncertainties are being dealt with on a campus-by-campus basis.

Bid packages for additional WDM equipment and IP router procurement have been delayed while the backbone design is being finalized. The Institute of Electrical and Electronics Engineers (IEEE) is pushing for June ratification of the new standard for 10 Gigabit/sec Ethernet. CENIC is hoping to be able to purchase equipment that is compliant with that new standard.

Source: Greg Scott, ONI Project Director, gscott@cenic.org

HPWREN to be used at CENIC 2002
The High Performance Wireless Research and Education Network (HPWREN) is playing a critical role at the upcoming CENIC 2002 Annual Conference. For the first time, CENIC and Internet2 broadcasted joint sessions from the CENIC conference in San Diego and the Internet2 conference in Arlington, VA. HPWREN was be used to connect to the CENIC backbone to enable the joint conference sessions to be broadcast. Steve Corbato and Bill St. Arnaud gave their CENIC 2002 talks from Arlington, and Internet2 broadcast the CENIC keynote speeches of Larry Smarr and Alan Willner to their attendees.

The HPWREN team is creating, demonstrating, and evaluating a non-commercial, prototype, high-performance, wide-area, wireless network in San Diego County. The NSF-funded network includes backbone nodes on the UC San Diego campus and a number of "hard to reach" areas in San Diego county. Not only is HPWREN used for network analysis research, but the network also provides high-speed Internet access to field researchers from several disciplines (geophysics, astronomy, ecology) and educational opportunities for rural Native American learning centers and schools.

National Networking News

Bus Ride on the Information Superhighway
Staff and students at UC San Diego don't have to wait until they get home to check their e-mail or get the latest news updates. The "CyberShuttle" takes commuters from campus to a popular commuter rail station--all the while offering high-speed, wireless Internet access.

The shuttle bus is a result of a partnership between UC San Diego and wireless technology firm Qualcomm Inc. Together they have developed a faster mobile wireless service that allows people to use their laptops, cell phones or hand-held computers to log on to the Internet during what would otherwise be down time.

Roberto Padovani, chief technology officer at Qualcomm, describes the mobile access as a marriage of two technologies. The bus is equipped with two boxes. One connects to the campus wireless network while the other, called an HDR modem, uses cell phone towers to provide continuous connectivity to the Internet. Both devices are powered by the vehicle's battery. The only requirement for users is that they have a wireless network card. The cards cost about $100, but many people on campus already use them to connect to UC San Diego's network.

Mobile Internet access is not new, at least for those with text-message pagers and cell phones. The difference on the UC San Diego bus is in the speed and range of the technology. Current technology moves information at about 20 kilobits per second, while the new technology's peak rate is more than 200 kilobits per second. It's faster than a cable modem, and would have the same feel as connecting a stationary computer via a digital subscriber line, or DSL.

The technology enables 50 to 100 commuters to be online at once, and the range is a radius of about 10 miles. So far, the technology has been installed on a single shuttle, which runs around campus and to the Sorrento Valley train station, about 10 miles away.

Early feedback has been so positive, says Ramesh Rao, director of the San Diego division of Cal-IT2, a partnership between UC San Diego, UC Irvine and the private sector that the school hopes to outfit every campus shuttle.

The San Diego campus may even expand use of the technology in the fall by handing out the lunchbox-size wireless modems to a few incoming freshmen. Those students, and anyone nearby, would then be able to make speedy connections to the Internet from their dorm rooms, the quad or the cafeteria. Giving the boxes to students, who would pay nothing for the service, will give researchers new insight into possible uses.

Source: LA Times, Anica Butler, Times Staff Writer

Internet2 Abilene Network to Partner with Juniper Networks to Deploy Next Generation Backbone Routing Product
Internet2 today announced that it will deploy Juniper Networks' most advanced core routing product for the next generation of the Abilene backbone network. The nationwide upgrade will quadruple Abilene's capacity to 10 gigabits per second and natively deploy the next generation Internet protocol, IPv6, using Qwest Communications' nationwide network infrastructure. The upgrade will maintain Abilene's position as one of the most advanced and far-reaching education and research networks in the world.

Scientists, teachers and students at more than 200 Internet2 member universities and research centers currently use Abilene to create and test advanced network applications that do not work well or at all using the commercial Internet. Abilene enables applications such as uncompressed high-definition television quality video; remote control of scientific instruments such as mountaintop telescopes and electron microscopes, collaboration using immersive virtual reality; and grid computing.

Abilene will deploy eleven T640 Internet Routing Nodes, the first product from Juniper Networks T-series Internet routing family. The T640 Internet Routing Node brings leading edge routing technology to Abilene, offering seamless multi-terabit scaling as well as IPv6 hardware forwarding. The routing platform upgrade to Abilene is scheduled to be complete by late fall 2002.

For more information see: http://www.internet2.edu/

Source: I2 News

SDSC Announces New High-Level Program for Computer Networking
The San Diego Supercomputer Center (SDSC) announced that it is developing a major new program in computer networking. In conjunction with this, SDSC is actively seeking a program director to lead the new program area, which will include both networking research and operations.

"SDSC is a partner in some of the most exciting network activities around," said Fran Berman, director of SDSC and of the National Partnership for Advanced Computational Infrastructure (NPACI). "The elevation of networking to a formal program area at SDSC signifies its importance to our mission."

Berman also announced the nationwide search for a Networking Program Director to oversee the effort. In addition to SDSC staff, members of the Networking Search Committee will include: Maxine Brown, Electronic Visualization Laboratory, University of Illinois at Chicago; Charlie Catlett, TeraGrid executive director, Argonne National Laboratory; Steve Corbato, Internet2; Greg Hidley, Cal-(IT)2, UCSD; Tom West, CENIC.

The search for candidates for the new position will begin immediately. Potential applicants are urged to send a letter of interest and curriculum vitae to the committee at net-search@sdsc.edu. For UCSD application information and employment procedures, please refer to http://joblink.ucsd.edu/awb/. SDSC is an EEO/AA employer.

More info can be found at http://www.npaci.edu/online/v6.7/net.dir.search.html

Source: SDSC

Grace Hopper Celebration of Women in Computing 2002
The Institute for Women and Technology's Grace Hopper Celebration of Women in Computing 2002 is the fourth in a series of conferences designed to bring the research and career interests of women in computing to the forefront. The conference will take place October 9-12, 2002 in Vancouver, British Columbia, the first international location for the series. The theme for 2002, "Ubiquity," focuses on the ubiquity of the impact of computers on our daily lives and the ubiquity of the impact women are making on this technical force.

"I'm pleased that the program reflects a balance of industry, academia, and government, and of research and development," said Amy Pearl, Hopper 2002 Program Chair. "In addition, this time we've had a dramatic increase in participation of women worldwide, notably a number of participants from developing nations." The keynote speakers for the Grace Hopper Conference are leaders in their respective fields. Judy Estrin, CEO of Packet Networks, will give the opening keynote talk. The banquet speaker is Fran Berman, Director of San Diego Supercomputing Center and Professor of Computer Science at University of California San Diego. Leah Jamieson, Professor of Electrical and Computer Engineering at Purdue University, will give the Friday keynote talk.

The Conference Registration is now open and can be found on the Grace Hopper Website: http://www.gracehopper.org. The Call for Posters and BOFs deadline is May 1, and the Call for Scholarship Applications deadline is June 1, 2002.

About CENIC
CENIC is a not-for-profit corporation formed by the California Institute of Technology, the California State University, Stanford University, the University of California, and the University of Southern California to facilitate and coordinate the deployment, development, and operation of a set of seamless and robust advanced network services. The CENIC Associates program offers qualified companies the opportunity to collaborate with CENIC in pursuit of the goal of providing the most advanced network services for research and education. Cisco Systems, Nortel Networks, Pacific Bell, and the University and Community College System of Nevada are CENIC's Partner Associates.

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