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PUBLICATIONS

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Quote of the Month

"Much as the NSFnet network in the mid-1980s and early 1990s laid the groundwork for the dramatic success of the Internet, we expect the NSF middleware program to lay foundations for middleware infrastructure and spur adoption of the advanced services that will define the networks and distributed systems of tomorrow."

--Alan Blatecky, NSF middleware program director

CENIC News

Pushing the Pyramid - CENIC's Network Development and Evolution is Now 3-D
CENIC's Optical Network Infrastructure (ONI) initiative is establishing a multi-tiered advanced networking services fabric to serve all research and education in California. This new fabric encompasses the three newly named entities - CalREN-XD - CENIC's experiemental and developmental network; CalREN-HPR - CENIC's high performance research network; and CalREN-DC - CENIC's Digital California Network.

This new structure has been illustrated in a pyramid graphic which has been transformed into a 3-D pyramid that can be invaluable when explaining the ONI. If you would like to receive a pyramid for yourself or to distribute on your campus, please drop a note to editor@cenic.org . Include your mailing address and the number of pyramids you'd like.

CommerceNet Awards $2 Million in Grants To Next Generation Internet Application Developers
CommerceNet and the California Technology, Trade and Commerce Agency -- Division of Science, Technology, and Innovation are awarding nearly $2 million in funding to five businesses, two universities and a foundation to support their continuing development of Next Generation Internet (NGI) Applications. Grant recipients include 3DGeo Development, Commerce One, Kenamea, The Pangea Foundation, Sophica, Strain Monitor Systems, UCLA's Advanced Policy Institute and the San Diego Supercomputer Center at UCSD. CommerceNet chose these organizations based on two primary criteria: the exemplary, direction-setting use of the NGI infrastructure by the application proposed, and the potential of the technology for stimulating economic growth and social improvement for individuals, companies, industries, regions, and communities throughout California. The field of winners covers a wide range of application areas. Global trading, multi-modal Internet access for the disabled, wireless Web Services, and prospecting for natural resources are a few of the sectors that will benefit from CommerceNet's grants.

Early next year, CommerceNet and the California Technology, Trade and Commerce Agency - Division of Science, Technology, and Innovation will award additional grants, ranging from approximately $100,000 to $ 300,000 each, for the development of applications that support the NGI. To get more information about applying, visit www.commerce.net.

For details about the projects funded please visit: www.commerce.net/initiatives/ngi/grantees/

Source: CommerceNet

DCP Progress Report
On October 16, the DCP Operations Center successfully completed acceptance testing of the SBC data communications equipment installation at the Shasta County Office of Education node site.

Also on the 16th, the Orange County Office of Education connected their LAN to the DCP router, giving them fully functional routing traffic to/from the DCP backbone to all 4Cnet, CalREN2 and Internet2 sites.

ISP services will be available on the DCP network effective 11/1/01.

Source: Ed Smith, DCP SAIC

CENIC Events Calendar Reminder
CENIC meetings, conferences, and other events can be found on the CENIC Events Calendar on the web at http://www.cenic.org/Events.html.

National Networking News

Building the TeraGrid
The San Diego Supercomputer Center and the California Institute of Technology are joined by the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign and Argonne National Laboratory in a $53 million National Science Foundation sponsored project to build and deploy a distributed terascale facility (DTF). The DTF will be the largest, most comprehensive infrastructure ever deployed for scientific research -- with more than 13.6 teraflops (trillions of calculations per second) of computing power and facilities capable of managing and storing more than 450 terabytes (trillions of bytes) of data.

Each institution plays a key role in the NSF's Partnerships for Advanced Computational Infrastructure (PACI) program, which is building the 21st century's information infrastructure. NCSA leads the National Computational Science Alliance (Alliance) and SDSC leads the National Partnership for Advanced Computational Infrastructure (NPACI). Argonne is a major Alliance partner and Caltech is a key NPACI partner. The partnership expects to work primarily with IBM, Intel Corporation, and Qwest Communications to build the facility, along with Myricom, Sun Microsystems and Oracle Corporation.

"Breakthrough discoveries in fields from biology and genomics to astronomy depend critically on computational and data management infrastructure as a first-class scientific tool," said Fran Berman, director of NPACI and SDSC and a principal investigator of the TeraGrid award. "The TeraGrid recognizes the increasing importance of data-oriented computing and connection of data archives, remote instruments, computational sites, and visualization over high-speed networks. The TeraGrid will be a far more powerful and flexible scientific tool than any single supercomputing system."

SDSC will lead the TeraGrid data and knowledge management effort by deploying a data-intensive IBM Linux cluster based on Intel Itanium family processors (McKinley). This system will have a peak performance of just over 4 teraflops and 225 terabytes of network disk storage. In addition, a next-generation Sun Microsystems high-end server will provide a gateway to grid-distributed data for data-oriented applications. Caltech will focus on providing online access to very large scientific data collections and will facilitate access to those data by connecting data-intensive applications to components of the TeraGrid. Caltech will deploy a 0.4-teraflop IBM Itanium processor family (McKinley) cluster and an IA-32 cluster that will manage 86 terabytes of online storage.

Source: NPACI (www.npaci.edu)

NSF Announces $12 Million Internet "Middleware" Awards
The National Science Foundation (NSF) announced three-year awards totaling almost $12 million for development of "middleware" to help scientists and researchers use the Internet to effectively share instruments, laboratories and data, and to collaborate with their colleagues. Middleware is software that connects two or more otherwise separate applications across the Internetbr>

The NSF Middleware Initiative (NMI) will create and deploy advanced network services for simplifying access to diverse Internet resources. Two major teams -- the new GRIDS (Grids Research Integration Deployment and Support) Center and a group formed by the Internet2 consortium -- will lead the NMI effort. The GRIDS Center will be a partnership of the University of Southern California's Information Sciences Institute (ISI), the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign, the University of Chicago (UC), the University of California-San Diego and the University of Wisconsin-Madison. The University Corporation for Advanced Internet Development (Internet2 group will consist of EDUCAUSE and the Southeastern Universities Research Association (SURA).

More info: http://www.nsf.gov/pubs/2001/pr0173/pr0173.txt

Source: NSF

Factoid: International Internet Bandwidth Continues Growth
International Internet bandwidth grew 174 percent between 2000 and 2001. While this is a strong growth rate, it has slowed from last year, when cross-border Internet links increased by 382 percent.

The Internet's global topology is growing in uneven spurts, however. In the past year, for example, Latin America's international connectivity grew by almost 480 percent to 16.1 Gbps. This growth came largely as a result of new submarine cable systems built by Telefonica (NYSE: TEF) and Global Crossing (NYSE: GX). Internet backbone providers purchased capacity on these systems in larger quantities and at lower prices than previously available.

Source: http://www.telegeography.com/

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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