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## Networking News

### ***GPN/CIC Reach Networking Agreement***

***Reliable, stable broadband connections*** are very important to GPN member institutions. Adding a redundant path for network traffic is important to achieving this goal. GPN and OmniPoP (a network collaboration of the CIC member universities with its primary location in downtown Chicago) are teaming up to develop a low cost back up for Internet2 connectivity between the two networks.

For a very small expense on both sides, this agreement allows either party's disrupted network traffic to automatically be re-routed through the other location during a time of local disaster. Both the leadership of CIC OmniPoP and the GPN Executive Council are enthusiastic about this arrangement, which should be completed by January 1, 2011.

### ***Internet 2's New President and CEO***

***H. David (Dave) Lambert was named the new president and CEO*** of Internet 2 on July 13, 2010. He took over for Douglas Van Houweling. Lambert is no stranger to advanced research and education networking. He is a founding member of the Mid-Atlantic Crossroads (MAX), a regional advanced Internet consortium, which provides critical connectivity for the research and education community and for many government agencies in the Greater Washington D.C. region. Lambert has also had active involvement in other national higher education technology initiatives such as the Common Solutions Group.

Lambert said, "I am humbled and extremely honored to have been chosen by the Board of Trustees as the second President and Chief Executive Officer for Internet2. My involvement in Internet2 from its founding in 1996 has given me a keen appreciation of the critical role Internet2's programs and services play in enabling America's foremost universities' and corporations' use of advanced networking technologies. I am excited to have the opportunity to lead Internet2's advanced networking communities into the next decade."

## Dynamic Network Systems (DYNES)

*This partnership was recently funded by the National Science Foundation* (see [here](#) for details) to develop and deploy a *Dynamic Network System* (DYNES), conceived as a nationwide “cyber-instrument” and spanning about 40 US universities and 11 Internet2 connectors. A collaborative team including Internet2, Caltech, University of Michigan, and Vanderbilt University will work with regional networks and campuses to support large, long-distance scientific data flows in the LHC, other leading programs in data intensive science (such as LIGO, Virtual Observatory, and other large scale sky surveys), and the broader scientific community. *They will soon be accepting applications to participate.* Regional networks, universities and labs will be eligible to apply.

- Get more information about this project at <http://www.internet2.edu/dynes>
- Get the latest announcements by subscribing to the mailing list at <http://lists.internet2.edu/sympa/subscribe/dynes>.
- To ask questions of the DYNES project team, email [dynes-questions@internet2.edu](mailto:dynes-questions@internet2.edu).
- To see questions answered go to <http://lists.internet2.edu/sympa/subscribe/dynes-questions>
- For a draft application package go to <http://www.internet2.edu/ion/docs/DYNES-application-package.pdf>.

## U.S. UCAN Means a Faster Connection Coming to an Anchor Near You

*The United States Unified Community Anchor Network* (U.S. UCAN) will be a nationwide, coast-to-coast advanced network infrastructure running at 100 Gigabits per second. It will enable connections between America's community anchor institutions, such as schools, libraries, community colleges, health centers and public safety organizations. This network will support advanced applications like IPv6 not possible with today's typical internet service. U.S. UCAN will support telemedicine and distance learning for all community anchor institutions, including those currently considered too remote or economically depressed to support advanced networks.

U.S. UCAN is funded by National Telecommunications and Information Administration (NTIA) in the U.S. Department of Commerce. The program was funded with \$4.7 Billion from the American Reinvestment and Recovery Act (ARRA) to enhance broadband connectivity. There are several partners involved, including Internet 2, National LambdaRail, Northern Tier Network Consortium, GlobalNOC at Indiana University, Ciena, Cisco, Infinera, and Juniper.

If you would like to stay up to date or get involved with U.S. UCAN, visit <http://www.usucan.org/>.

## Exascale Computing: Beyond the Teragrid!

*By Kate Adams, GPN*

*Exascale computing is the attempt to move computing capabilities beyond the existing, successful petascale level. Computational speed is measured in terms of flops or floating point operations. One exaflop is equivalent to 1000 petaflops or 1,000,000 teraflops. Clearly, computing in exaflops is way faster than computing in peta- or teraflops*

How did we get here? Well, computer processing speed has grown at an exponential rate, roughly following Moore's law. The trend has continued for more than half a century, but it is expected to slow down somewhere around 2015.

So, how do we achieve exascale computing speeds? At the Oklahoma Supercomputing Symposium,

**Horst Simon** of Lawrence Berkeley Labs discussed this very issue (slides are up on the web in Power Point and PDF format at <http://symposium2010.oscer.ou.edu/speakers.html#simon>). Simon indicates that, in spite of chip speed topping out, some key technology improvements will make exascale computing possible. Look for improvements in the areas of

1. Number of processors (current laptops typically have multiple processors)
2. On-chip data movement
3. System-wide data movement
4. Memory Technology
5. Resilience Mechanisms

One very real issue to contend with as more processing cores become available, is the demand for software that can make efficient use of those processing cores. To that end, NSF announced in March that it is partnering with agencies in Canada, France, Germany, Japan, Russia and the UK to competitively support collaborations to achieve *Application Software towards Exascale Computing for Global Scale Issues*. This effort will support collaborative research projects that are comprised of researchers from at least three of the partner countries. Proposals will be jointly reviewed by the participating funding organizations, and successful projects are expected to demonstrate added value through multilateral collaboration.

## Cyberinfrastructure in the EPSCoR States: Recent Meeting

By Greg Monaco, GPN

*I attended the EPSCoR\* workshop on cyberinfrastructure* that was held in Arlington, VA at the beginning of October. During the meeting I took extensive notes and they were made publicly available, during the course of the meeting, at <http://collaboration.greatplains.net/blog>.

In order to enable institutions in EPSCoR jurisdictions to be more competitive for funding, the EPSCoR Office at NSF has made significant investments in CI across EPSCoR jurisdictions. Here is a list of the recent EPSCoR funded CI projects in our region:

Project Title	PI	State
• Collaborative Research: Cyberinfrastructure for Transformational Scientific Discovery in Arkansas and West Virginia (CI TRAIN)	Apon, Amy	AR
• RII: Arkansas ASSET Initiative	McClure, Gail	AR
• Collaborative Research: EPSCoR RII Track 2 Oklahoma and Kansas: A cyberCommons for Ecological Forecasting	Bowman-James, Kristin	KS
• Prairie Light: Next Generation Networking for Mid-continent Science	Bowman-James, Kristin	KS
• Nebraska 2010-12 RII Track C2	Choobineh, F. Fred	NE
• Collaborative Research: Cyberinfrastructure-enabled Computational Nanoscience for Energy Technologies	Choobineh, F. Fred	NE
• Oklahoma Optical Initiative	Neeman, Henry	OK
• Collaborative Research: EPSCoR RII Track 2 Oklahoma and Kansas: A cyberCommons for Ecological Forecasting	Risser, Paul	OK
• Beyond the 2010 Initiative: Partnerships for Competitiveness	Rice, James	SD
• Partnerships for Competitiveness: Cyber-enabling Primarily Undergraduate Institutions	Rice, James	SD

\*The EPSCoR program within the National Science Foundation is set up to stimulate competitive research among states and other jurisdictions (e.g., Puerto Rico and the Virgin Islands) that compete less well for scientific funding. There are similar programs at other funding agencies. GPN members come from eight of the 29 EPSCoR jurisdictions.

## Upcoming Meetings

### November, 2010

- Internet 2: [Fall 2010 Member meeting](#), November 1-4 in Atlanta, GA.
- SC2010: [SC10 Conference, November 13-19, 2010 in New Orleans, LA.](#)

### January, 2010

- Joint Techs: [Winter Meeting, January 30 – February 3, 2011 in Clemson, South Carolina](#)

### March, 2011

- Educause: [Midwest Regional Conference](#), March 14-16, 2011 in Chicago, IL.

### June, 2011

- GPN Annual Meeting: June 1-3, 2011

## To Contribute to the Newsletter

To contribute a story or to announce an upcoming meeting or event, send your contribution to Bill Mitchell ([bill@greatplains.net](mailto:bill@greatplains.net)), Greg Monaco ([greg@greatplains.net](mailto:greg@greatplains.net)) or Kate Adams ([kate@greatplains.net](mailto:kate@greatplains.net))

## About the Great Plains Network

The Great Plains Network develops and maintains a high-performance network that meets the needs of cyberinfrastructure to the membership; and supports multi-institutional, multi-disciplinary research and education initiatives that require advanced cyberinfrastructure. GPN members include research and education institutions in nine states and also connects most other higher education institutions, school districts and public libraries in those states to Internet2.

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