JET Meeting Minutes
July 13, 2010
Columbus, Ohio
(In coordination with the Joint Techs/ESCC Meeting)

Action Items

1. If you have requirements for A-Wave, please contact Julio Ibarra:
Julio Ibarra <julio@fiu.edu>

Proceedings
This meeting of the JET was chaired by Vince Dattoria of DOE.

Network and Exchange Point Roundtable

AmPath: Ernie Rubio
AmPath is continuing its cooperation with WHREN-LILA. Its circuit to Brazil is showing a lot of traffic. AmPath is cooperating in the rebuilding of the Haitian infrastructure. They are working with the U of West Indies to provide connectivity to Jamaica and West Barbados.

A-Wave: Ernie Rubio
An A-Wave transponder failed on a path without redundancy so A-Wave is temporarily down. The next 3-4 months are critical to defining the future of A-Wave; the availability of the original circuits is ending and alternatives for providing circuits have to be identified if A-Wave is to continue.

AI: If you have requirements for A-Wave, please contact Julio Ibarra:
Julio Ibarra <julio@fiu.edu>

Caribbean Networking (See also the Caribbean update below): Jocelyn Gerich & Ernie Rubio
An OC3 line at Florida International University (FIU) provides service to St Croix campus of the University of the Virgin Islands. Line of sight radio connectivity onward to St Thomas provides connectivity to the UVI's campus there. The FIU circuit provides access to Internet2net.

C-Wave: Kevin: Kevin McGrattan
The C-Wave node in Raleigh is operational. It was inserted in the Washington to Jacksonville leg and is located in the Level 3 PoP. RENCI is not yet operational..

DREN: Ron Broersma
The organizational leadership of DREN has changed significantly. DREN is issuing a new solicitation for a network provider. DREN is holding its annual conference in August. They are seeking improved connectivity to Alaska.
Slides from the DREN v6 update at the Summer ESCC/Internet2 Techs

Workshop are at:
    www.internet2.edu/presentations/jt2010july/20100713-Broersma-DREN IPv6 Update JtTechs.pdf

ESnet: Joe Burrescia
    ESnet has awarded a contract for dark fiber connectivity in a ring from New York City to Brookhaven. Service is scheduled for November. The ARRA funded tabletop testbed at Berkeley will be extended to Brookhaven over this ring. Originally the networking will be multiple 10 G links but it will move to 100 G. ESnet has tested several 100 G prototype routers in the lab. They maintain a blog on the testing. (See: They have 10 G between San Jose and Equinex. A similar upgrade was done in Chicago. Ashburn remains to be done. Traffic is dominated by large-scale applications. A 1 G VLAN demonstration was set up for USGS helping to connect NASA Ames to EROS in Sioux Falls, SD.
    For more details, see the slides from the ESnet update at the Summer ESCC/Internet2 Techs Workshop:
    www.internet2.edu/presentations/jt2010july/20100714-Carter-Joint Techs ESnet.pdf

Internet2: Chris Robb
    Dave Lambert has been named the CEO of Internet2.
    Internet2 is migrating its ION service to the MPLS network. ION service is being transitioned to a Juniper-based network July 6. The current ION service over Ciena equipment will be decommissioned. Internet2 is beginning to see requests for 2 x 10 G or 2 x 5G connections. More bandwidth is being implemented between New York to Chicago and Los Angeles to Chicago.
    Internet2 is developing plans to carry out its portion of the USUCAN BTOP award.
    For more details, see the slides from the Internet2 update at the Summer ESCC/Internet2 Techs Workshop:
    www.internet2.edu/presentations/jt2010july/20100712-Boyd-Internet2 Update.pdf

NLR: Brent Sweeney
    NLR is implementing changes under its portion of the USUCAN BTOP award. NLR's intent is to replace their 20 FrameNet switches and eight CRS routers with 100 G capable Cisco 9000 ASR boxes yielding a collapsed layer 2/3 service.. Seven additional 9000s will be deployed at locations still being resolved. As part of the BTOP effort NLR expects to have 100 G from New York through Boston and Albany to Chicago, and Houston to Atlanta after the ASRs are deployed. NLR now has about 100 telepresence users, an increase from 3 users a year ago.

NOAA: Mark Mutz
    NOAA is installing its core network. The first site is in Chicago. Atlanta will be installed next week, followed by Denver and McLean.
    For more details, see the slides from the NOAA update at the Summer

ESCC/Internet2 Techs Workshop:
    www.internet2.edu/presentations/jt2010july/20100713-Litvanyi-Mutz-NOAA-NWave.pdf

NREN: Dave Hartzell
    A NASA Ames Layer 2 link to Sioux Falls, South Dakota is up and working with transit over 4 networks. Earth Science data is being transmitted between Sioux Falls and NASA Ames at about 400 Mbps.

Pacific Wave
    Pacific Wave received an extension of its IRNC grant. They will be identifying updates to their network. They currently provide 20 G service along the Pacific coast.

TransPac: Brent Sweeney
    TransPac was reauthorized under the IRNC awards for an additional 5 years to provide service from North America to the Asian region. It is a partnership of APAN and Indiana University. They plan to provide Ethernet service if possible.

ACE: Brent Sweeney
    ACE is a new IRNC award to connect North America to Europe. It will provide either 10 G or 40 G service depending on funding and costs of service. GÉANT is a partner in the ACE service along with Indiana University.

CIC OmniPoP
    The CIC OmniPoP has a second Chicago link up and running.

Northern Tier
    No change.

SOX: Cas D'Angelo
    South Carolina Light Rail and the Savannah River site, is considering Internet2net and NLR for its connectivity.

MANLAN: Dale Finkelson
    MANLAN had an outage on July 6 on its Ethernet switch that is now resolved.

StarLight: Alan Verlo
    StarLight is supporting demonstrations at a GENI San Diego meeting soon. They will be supporting a dynamic circuit demonstration to the October GLIF meeting in Geneva, Switzerland. StarLight is supporting a CANARIE request for connectivity to San Diego for a research project.

PNWGP
    They are expanding their colo space.

Ames Research Center: Dave Hartzell

No change.

Upcoming Meetings of Interest
July 14-16: IPv6 Workshop at OSU (Joint Techs)
July 20-22: UCSD GENIE Meeting
August 9-13:   APAN, Hanoi, Vietnam
August 16-18: NASA IT Summit, Washington, DC
August 16-19: DREN Networking and Security Conference, Monterey, CA
August 28-September 1:   NSF/NASA/LSN Highly Dynamic Networking Workshop,
             Ames Research Center, Mountain View, CA
October 13-15 GLIF Meeting, Geneva, Switzerland
November 1-4: Internet2 Members Meeting, Atlanta, GA
November 13-19   SC10, New Orleans, LA
January 30-February 3: ESCC/Internet2 Techs Workshop, Clemson, SC
February 3-4: ESCC, Clemson, SC
January-February 2013: Techs in Paradise

Route Flapping
        Ames Research Center observed route flapping on older hardware there for multicast applications. The hardware had trouble handling storms. Ames shut down it's Layer 3 service and moved to Layer 2 multicast peering where no problems were observed.

perfSONAR Workshop: Matt Zekauskas
        The perfSONAR Workshop was held July 8-9 in Arlington, Virginia. About 90 people attended and contributed to the workshop. The workshop had 4 sections including:
  - Community building
  - Operational uses
  - New capabilities
  - Security

        The workshop results are being compiled currently and a white paper will be presented in approximately 2 months. Some initial observations of the workshop participants included:
  - If we add additional tools and capabilities how do we implement them across the total community
  - For data produced for consumption, it should be standardized/uniform and metadata should be produced
  - Documentation including cookbooks and recipes is needed
  - Interpretation of the data is a critical issue
  - Policies for AAA are needed
  - Federated authentication is needed
  - Authentication trails are needed
  - Different levels of authorization are needed for different users

Interdomain perfSONAR Testing: Joe Metzger

Science networks, including Internet2net, NLR, U Tn, DREN, and ESnet are cooperating on demonstrating interdomain perfSONAR. The infrastructure (measurement points and equipments) and cooperation have been established. Performance measurement data for bandwidth is being taken between each pair of sites. Andy Germain at NASA Goddard is cooperating to provide performance data to additional perfSONAR sites. Some of the sites are relatively idle. Bandwidth data shows steady bandwidths. Some networks are carrying significant traffic, e.g., ESnet to Internet2. Some paths have no interconnectivity, e.g., NLR and Internet2net. The perfSONAR testing is primarily exchanging bandwidth data now. People are used to sharing this data. Some systems have firewalls that are allowing access through the firewalls for these tests. Some sites have IPv6 implementations but not all sites have IPv6.

The perfSONAR testbed will continue to take measurements and collect data through August. Before the JET's meeting in August the testbed participants will write a report to the JET for presentation to the LSN Annual Planning Meeting scheduled for the second week of September.

Western Regional Network (WRN): Dave Reese

Four states in the West including California, PNW GigaPoP, Colorado, and the U of New Mexico signed an agreement under the acronym WRN. They are getting waves from NLR and Internet2net and enabling Layer 2 links over these waves. The objective is to share 3 x 10 GInternet2net ports and 4x 10G NLR ports to provide diversity in networking and to, hopefully, reduce overall costs to the participants. Each network has users who do not fit the AUPs of other members. WRN is an AUP free network consortium. A Denver to Albuquerque to LA link is operational. This will tie into Pacific Wave although WRN is not a Pacific Wave participant. CENIC, PNW GigaPoP, and Front Range are all connected to the WRN and are providing sites.

Caribbean Networks Update: Jocelyn Gerich

The Caribbean is characterized as small islands states with relatively long distances between the states.. Consequently, there currently is not much connectivity in the Caribbean. Puerto Rico is the exception and it has good connectivity currently. The U of West Indies in Trinidad is connected via a STM1 link. UWI's Barbados campus will be connected in the near future. Internet2 has a regional interest group for the Caribbean led by Heidi Alvarez of FIU. This group meets at all Internet2 member meetings. The latest meeting focused on Haitian connectivity.

The University of Puerto Rico is connected via AmPath. U of Virgin Islands has two campuses connected and they rely a lot on videoconferencing. The Caribbean Knowledge and Learning Network is planned to connect the Caribbean area islands. CaribNet will be a regional network connecting 20 states in the Caribbean. It is currently in procurement with planned deployment in December 2010, operations in 2011. They are procuring both inter-island connectivity and long-haul circuits. They will connect to Miami and to RedClara in Panama City.

WHREN-LILA is now called AMLight. A new award to them supports dynamic

circuits with partners in South America. They will be deploying perfSONAR. There are 2 links to Sao Paulo, Brazil and one link to Los Angeles. CaribNet will implement 3-4 islands in the beginning in an unspecified order. There is a lack of research networks in the Caribbean but a current movement is emphasizing the deployment of science networks.

Next JET Meetings
August 17, 2010, 11:00-2:00: NSF, Room TBA
September 21, 11:00-2:00: NSF, Room TBA