

JET Meeting Minutes  
July 16, 2013

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**Action Items**

**Proceedings**

This meeting of the JET was chaired by Vince Dattoria of DOE/SC and Kevin Thompson of NSF.

**SCinet Connectivity**

ESnet plans to have 2 x 100G connectivity to SCinet, 1 x 100G facing East to Avenue of the Americas and the ANA network and 1 x 100G facing West.

**Roundtable**

**NOAA**

NOAA is adding new NOAA customers to its N-Wave network, including National Ocean Service, National Weather Service, and NESDIS' GOES-R and JPSS satellite programs. N-Wave is working on 4 Trusted Internet Connection (TIC) sites to support NOAA.

**Internet2**

Internet2 is adding new AL2S nodes in Boston, Phoenix, Albany and Minneapolis. Additional AL2S nodes in Columbia (Missouri), Jackson (Mississippi), Pittsburgh and Portland are scheduled over the next 2 months. They are configuring adjacencies on the AL2S network. They are transitioning the 10G backbone to 100G AL2S in steps. The 10G IP backbone will be augmented with additional bandwidth as a backup in case of an AL2S failure.

**ESnet: Patrick Dorn**

In the DC metropolitan area ESnet is switching from its connection from the NGIX at MAX to the WIX in McLean. They are also migrating their metro from MAX to ESnet owned infrastructure. It will have interfaces to DREN and the MAX. The ESnet 100G testbed is being extended from StarLight to 32 Avenue of the Americas. It is expected to be operational by the end of August. This link will provide connectivity to the ANA 100G trans-Atlantic link for intercontinental experiments. ESnet just completed installing beta Juniper hardware, an IPTX box alien wave into the Bay area network, a span of 1000 Km.

**NIH Networking: Don Preuss**

NIH is installing a 100G connection. Equipment is coming in now and it is expected to be operational in about 8 weeks. It will be used to support a SC13 demonstration with Bob Grossman at the U. of Chicago. This demo will be tested in August.

**WIX: Tom Lehman**

The WIX is operational and people are being connected. They are currently designing the connection to A-Wave

**MAX: Tom Lehman**

The MAX is deploying a 100G infrastructure. Several nodes are already installed at 100G and the Internet2 connection will be operational in August. They are testing connectivity to Johns Hopkins, LTS (Laboratory of Telecommunications Science), and NASA GSFC. They are deploying a GENI rack and are doing performance testing for SC13.

**Seattle: Jonah Keough**

Seattle is working on 100G connections via an AL2S connection to Chicago.

**GENI: Kristin Rauschenbach**

ExoGENI has been deployed at four sites: RENC1, StarLight, NERSC, and USC. The GENI engineering conference starts this Sunday (July 21). GENI topologies are connected through GENI racks. There are several new users, especially for educational use. They are doing a summer camp on SDN for educators.

**NCO Report: Grant Miller**

The JET Big Data Team is planning several demonstrations at SC13. These include:

- Sloan Digital Sky Survey which will move data from Johns Hopkins to StarLight and the ESnet 100G production network to access the Jaguar computational facility at Oak Ridge National laboratory for modeling and analysis. The results will be sent back to Johns Hopkins and SC13. This demonstration was previously demonstrated over 10G links. Discussion identified that we should try to show the difference in speed/quality between the 10G connectivity and the 100G connectivity.
- Bioinformatics/Genomics demonstration between the NIH in Bethesda, Maryland, the U. of Chicago (Bob Grossman) and SC13.
- Remote I/O: Linden Mercer has been working with the Luster User's group to demonstrate a UDT Luster interface that will be demonstrated at SC13.
- Data Accelerator Demonstration: Phoebus; Eli Dart and Martin Swamy are seeking a site to demonstrate the Phoebus accelerator application at SC13.

#### SDN workshop:

A workshop is being planned for December 17-18 at the NSF to plan for the deployment of a national/international scale Interdomain, Layer 1, 2, and 3 interoperation, secure SDN prototype operational network.

#### perfSONAR workshop:

A workshop targeted at transitioning the support of perfSONAR to the users community is tentatively set for February 2014. Location, date, etc remain TBA.

#### **NIH Trusted Internet Connection (TIC): Don Preuss**

HHS is deploying their own TIC because they have so much data to send out, 35 TB of data per day and increasing rapidly. Nexus 7000, 5000, and 2000 are being used. The HPC nodes are 10G. Campus architecture is being revised to support 100G on-campus. The TICs provide 10G functionality. The TICs are being located in Washington, DC; Atlanta; and Albuquerque. Currently they are experiencing 2-3G average loads with peaks up to 14G. Unrestricted traffic is read-only data and can be sent out outside the TICs. Routing supports both TIC and non-TIC traffic. Sites are being deployed now and are awaiting the order to turn them up.

NIH is willing to discuss hosting other-agency TIC requirements. Management of the TICs is moving from NIH to HHS in October.

#### **Brazilian Networking; RNP and AmLight: Alex Moura**

RNP has plans to implement a 100G backbone network with Telebras as its partner. Initially a southeast optical ring plus Curitiba City will be upgraded to 100G. This infrastructure will be used as a testbed for SDN trials. In 2014 a northeast ring will be upgraded to 100G subject to budget approval.

RedCLARA currently provides South American networking between Madrid, Sao Paulo, Chile, Argentina, Peru, Columbia, Venezuela, Mexico, Miami (Florida), and several Central American sites at up to 2.5G speeds. Several upgrades to this network are planned in 2013. Central American sites include Panama, Costa Rica, Nicaragua, Guatemala and Mexico. Additional links are provided to Jamaica and the Cayman

Islands. Other links being upgraded/deployed include Buenos Aires to Porto Alegre and Antofagasta (Chile) to Lima (Peru)

AmLight provides 2 x 10G links between Sao Paulo to Miami and 1G Sao Paulo to Santiago. Additional links are being implemented between Santiago to Miami to provide independent pathways. RedCLARA plans additional links at 10-100G between Santiago, Panama and California.

For the complete briefing and network maps, please see the JET Wiki at:  
[http://www.nitrd.gov/nitrdgroups/index.php?title=Joint\\_Engineering\\_Team\\_\(JET\)#title](http://www.nitrd.gov/nitrdgroups/index.php?title=Joint_Engineering_Team_(JET)#title)

### Meetings of Interest:

July 21-23	<a href="#">GEC17</a> , Madison, WI
July 22-25	<a href="#">XSEDE13</a> , San Diego, CA
August 19-23	<a href="#">APAN36</a> , Daejeon, Korea
September 9-13	<a href="#">CANS</a> , Hangzhou, China <nb: new location
September 10	<a href="#">ARIN / NANOG on the Road</a> , Portland, OR
September 12	<a href="#">ARIN on the Road</a> , Calgary, AB, Canada
September 19-20	<a href="#">Workshop on Scaling Terabit Networks</a> , Washington, DC
October 1-2	<a href="#">Global LamdaGrid Annual Workshop</a> , Singapore
October 7-9	<a href="#">NANOG59</a> , Phoenix, AZ
October 10-11	<a href="#">ARIN 32</a> , Phoenix, AZ
October 27-29	<a href="#">GEC18</a> , Borrklyn, NY
October 28-29	<a href="#">2013 CANARIE National Summit</a> , Ottawa, ON, Canada
November 17-22	<a href="#">SC13</a> , Denver, CO
December 17-18	SDN Operational Prototype Network Workshop: By invitation and by Webcasting
January 20-24, 2014	<a href="#">APAN37</a> , Jakarta, Indonesia
February 10-12	<a href="#">NANOG60</a> , Atlanta, GA
Feb 2014	perfSONAR Workshop: TBD

### Next JET Meetings:

**August 20:** 11:00-2:00, NSF, Room II-515  
**September 17:** 11:00-2:00, NSF, Room TBA

*Note: The Nov meeting will be in Denver, CO, during SC*