JET Meeting Minutes
June 18, 2013
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Action Items
1. Continuing: Grant Miller will contact DHS to identify a discussant with the DHS TIC design Department.
 2. Continuing: Eli Dart will schedule a Big Data Testbed teleconference to discuss what network resources are needed to support the Big Data demonstrations at SC13, including inter-booth 100G networking at the conference.
3. Mark Foster will contact Paul Love with a NASA Point of Contact to discuss the NASA implementation of TICs.

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

100G Intercontinental Network Link: Erik-Jan Bos
        Erik-Jan Bos presented a description of the recently deployed 100G wave trans-Atlantic link. Recently trans-Atlantic connectivity was based on 10G links, leased capacity as a service and often mission-oriented. Big science applications generate flows over 10G and soon over 40G. No market exists for 100G and above yet. The Advanced North Atlantic (ANA)-100G collaboration was announced April 24, 2013 among ESnet,

SURFnet, NORDUnet, Internet2, CANARIE, and GEANT. Its goals are to provide new models for collaboration, new governance, new technologies and a public-private partnership with industry. The network pilot was planned to be operational by June 3, 2013, an ambitious implementation.

ANA-100 today is using spectrum and open exchanges. It provides connectivity between MAN LAN at 32 AoA in New York to TeleCity2 in Amsterdam with an extension to Maastricht for TNC. Several demos over the 100G network included:
- Big Data transfers with multipathing, OpenFlow and MPTCP.
- Visualization of the 100G traffic
- First European ExoGENI at Work
  (Inder Monga & the ESnet team implemented the 100G visualization)

The 100G will remain for at least 12 months to support applications development. Research is considering a 2nd 100G link to provide full resiliency using more open exchange points. They are seeking additional collaborators.

The full briefing may be found on the JET Website at:
http://www.nitrd.gov/nitrdgroups/index.php?title=JET_Meetings_2013

NOAA TIC: Caren Litvanyi
The NOAA Science Network (N-Wave) is implementing Trusted Internet Connections (TICs) to meet DHS requirements, maintain resiliency, avoid single points of failure, provide for growth, scability and change, ensure efficient use of circuits and network resources, and provide cost-effective solutions. Traffic symmetry was a critical issue for NOAA. Symmetry could be enforced by using a single-track TIC stack or by operating X-Wave (a net on the other side of the TICAPs) and N-Wave in a tightly coordinated manner to ensure policy and configuration synchronization. For security purposes X-Wave is operated on a separate physical infrastructure. A Science DMZ is located at each TIC site to facilitate HPC/bulk data transfers. The first two NOAA sites for TIC implementation are in Boulder and Seattle. The TIC implementation team includes Dave Hartzell, Robert Sears, and Mark Mutz.

AI: Mark Foster will contact Paul Love with a NASA Point of Contact to discuss the NASA implementation of TICs.

Roundtable

ACE: Brent Sweeny
Ace currently has 3 x 10G across the Atlantic. They are interested in the 100G trans-Atlantic link.

ESnet: Eli Dart
ESnet has been supporting the implementation of the 100G trans-Atlantic wave. ESnet is hosting an International Networking Collaboration Competition to foster research on making efficient use of networking to support international science collaborations.

ESnet is looking into network connectivity for SC13. The restrictions on Federal workshop participation is leading to booth consolidation and limited Federal participation which is expected to limit possibilities for demonstrations at SC13.

A-Wave: Don Riley
Nothing new to report

African Connectivity: Don Riley
DANTE (Delivery of Advanced Network Technology to Europe) has awarded a 15 year contract to WIOCC for connectivity services in Southern and Eastern Africa, kicking off a two year planning and procurement phase for the AfricaConnect project. In 2015, the contract will provide high-speed data transmission from DANTE to the UbuntuNet Alliance. The connectivity procured under the AfricaConnect project complements the UbuntuNet network, a high-capacity network for research and education in Sub-Saharan Africa which creates a regional gateway for global research collaboration

Internet2: Dan Taylor
Nothing new to report

TransPac: Brent Sweeny
JGN is planning a three-continent demonstration of OpenFlow with Europe across the United States, Europe, and Asia.

US Ignite: Glenn Ricart
US Ignite is holding an Application Summit meeting June 24-26 in Chicago, Illinois.

Ames Exchange Point: Hugh LaMaster
Ames is working with carriers to bring in diverse fiber

StarLight: Alan Verlo
StarLight is working with Ciena on demonstrations for a technical showcase in Ottawa, Canada. They are supporting the US Ignite Applications Summit demonstrations in Chicago, June 24-26. StarLight also supported demonstrations at the TERENA Network Conference in Maastricht.

Big Data Testbed: Eli Dart
The Big Data Testbed Team is considering the availability of booth space, demonstration capacity, and personnel to support the Big Data Testbed demonstrations at SC13.

Prototype 100G dynamic, Layer 1, 2, 3 SDN Optical Network: Grant Miller
Several agencies expressed an interest in leveraging existing SDN testbeds and domains to demonstrate a national/international scale operational networking capability

of Layer 1, 2, 3 inter-domain dynamic optical 100G SDN networking. The White House is very supportive of this objective and will promote the idea of a workshop that will:
- Identify needs and requirements for developing and operating the prototype network
- Include representatives of Federal agencies, research community, commercial providers and users, and laboratories
- Develop recommendations for steps to proceed with the prototype network
- Identify potential responsibilities of the federal agencies
- Identify timing of the network deployment
- Provide a report to OSTP and the NITRD Subcommittee on the workshop findings
- Coordinate under the LSN and JET NITRD structure.

Discussion identified that there are currently several efforts and several constituencies interested in deploying operational SDN over dynamic optical networks. We should coordinate and cooperate with these constituencies by making sure they are represented in the workshop. International organizations should be included to demonstrate an international capability including Netherlands, Japan, and StarLight. A coordinated LSN and JET effort is needed to promote progress on deploying an operational network and to promote rapid technology transfer to the commercial sector. The workshop should be held in the winter 2012-2013. Kristin Rechtenbaugh of the GENI Project indicated that the GENI testbeds are very interested in this capability and plan to coordinate with this effort.

Meetings of Interest:

June 24-26	US Ignite Application Summit, Chicago
July 15-16	ESCC, Berkeley, CA
July 17-18	Focused Technical Meeting, Network Issues in Life Sciences Research LBL; See: http://events.internet2.edu/2013/ftw-life-sciences/
July 21-23	GEC17, Madison, WI
August 19-23	APAN, Daejong, Korea
September 9-13	CANS, Chengdu, China
September 10	ARIN / NANOG on the Road, Portland, OR
September 12	ARIN on the Road, Calgary, Alberta, Canada
October 1-2	Global LamdaGrid Annual Workshop, Singapore
October 7-9	NANOG, Phoenix, AZ
October 10-11	ARIN 32, Phoenix, AZ
October 28-29	2013 CANARIE National Summit, Ottawa, ON, Canada
November 17-22	SC13, Denver, CO
February 10-12, 2014	NANOG, Atlanta, GA

Next JET Meetings:

July 16:	**5:45-7:45PM (PDT), LBNL, Berkeley, CA**
August 20:	**11:00-2:00, NSF, Room II-515**
September 17:	**11:00-2:00, NSF, Room TBA**