

JET Meeting Minutes

June 19, 2012

I. Participants

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Action Items (new)

1. Contact Glenn Ricart <glenn.ricart@us-ignite.org> if you have suggestions for US Ignite projects and applications.
2. Contact Bobby Cates <bcates@mail.arc.nasa.gov> if you are interested in utilizing the NASA dark fiber link at Ames Research Center.

3. If you have proposals for use of the ESnet dark fiber please contact Inder Monga <imonga@es.net>

Action Items (carry forward)

4. DREN asks science networks to let DREN know (Phil Dykstra <phil@hpcmo.hpc.mil>) about their peerings: who they peer with, where they peer and standard/bandwidth of peering.

Proceedings

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

JETnet Roundtable

NOAA: Dave Hartzell

NOAA is just bringing into use an OC3 from Seattle into University of Hawaii. They have metro-Ethernet from there to Ford Island and other locations on Oahu. NOAA hopes to build a multi-agency TIC in coordination with FEMA, Un. of Hawaii, and USGS.

TransPac/ACE: Brent Sweeney

TransPac is considering Phoebus nodes in Japan and LA. They recently had the official launch of a circuit to Beijing, China.

ACE has connected to WIX. It has 4 circuits to Europe

US Ignite: Glenn Ricart

US Ignite is installing GENI racks now. They are connecting 25 communities, 15 industry sites and 10 community/university sites. A Dear Colleague letter was issued soliciting additional applications for US Ignite.

AI: Contact Glenn Ricart <glenn.ricart@us-ignite.org> if you have suggestions for US Ignite projects and applications.

Pacific Wave: Celeste Anderson

Pacific Wave is working with Internet2 in the upgrading its Pacific Coast fabric to 100 G. The upgrade is expected to be completed in August 2012. They are working on OSCARS implementation across Pacific Wave. They have implemented a China link. The CUDI link from LA to Tijuana was upgraded to 10 G along its entire path. AARNet is upgrading their links from LA and Seattle from 10 G to 40 G.

Brocade switches are now installed in LA and Sunnyvale. They are waiting for 100 G service. Pacific Wave is holding weekly teleconferences to coordinate the implementation of IPv6.

AWave: Julio Ibarra

AWave is working on a 5-year project to add bandwidth and SDN. They plan to implement 10 G connectivity to MAX, MAN LAN, SoX, Southern Light and AmPath.

They will provide international transit between South America and the U.S. and international transit to Europe.

ESnet: Inder Monga

ESnet is planning upgrades to 100 G before SC12. They will implement 100 G from Salt Lake to Sunnyvale and to StarLight. ESnet continues planning for its transition to 100 G and for support of SC12. ESnet will provide a 100 G production link to Salt Lake City for Level 3 SCinet service; they are aiming for a total of 3x100 G to the show floor.

Internet2: Chris Robb

Internet2 plans to complete its West Coast optical footprint using Ciena by August. They will transition existing links to the Ciena system. Internet2 is building its advanced Layer 2 network. The first Layer 2 links will be implemented in late July. The fabric is planned to be completed and lit in October 2012. They are acquiring colocation space in Singapore and collaborating with CERNet and others in Asia. Internet2 is planning to provide 3 x 100 G to the SC12 show floor.

Internet2 is transitioning service to Ciena over the next 2 weeks, except for its West Coast fabric which will be transitioned in August. AmPath provided funding to upgrade the Internet2 link to CUDI in Tijuana.

AmPath: Julio Ibarra

AmPath is collecting data on different flows on its network to identify what hybrid networking is doing for South America. The Caribbean networks are now connected to AmPath.

RNP: Marcel Faria

RNP plans a new connection in September or October 2012 from Northern Brazil to the U.S. expanding RNP's current 20 G to 30 G. RNP is working with Akamai and Google for caching. They are talking to Telebras about backup capability. Twenty seven cities in Brazil are connected to metro circuits. Soon 14 more will be added. They have connectivity via Red Clara to Madrid at 2.5 G. There is a 10 G link to Buenos Aires and Chile. They are working to develop connectivity to the Caribbean through Red Clara and to the rest of the world. They are developing plans for peering dynamic services and SDN with Internet2. They are considering peering for data transfers with DYNES.

GENI: Tim Upthegrove

GENI is rolling out 5 regional networks. They will implement GENI Racks before October 12.

Mississippi Networking: Greg Grimes

The state of Mississippi is implementing an optical network, Mississippi Optical Network (MissiON), to seven sites including, Ole Miss, Jackson State University, Stennis, University Medical Center, ERDC, and Mississippi ITS. They are implementing 2 x 10 G links to Jackson to the PoP from Internet2.

Alaska R&E Network: Shawn Armstrong

Alaska has implemented an R&E network at over 1 G. This has been possible due to the expanded reach of broadband service to libraries in the state from the states BTOP award. It enables videoconferencing, social networking, education initiatives, telemedicine, and cultural exchanges widely and has pulled the rest of the network along. They are investigating IPv6 implementation as the carriers in the state are finally to provide v6.

Exchange Points

MAN LAN: Dale Finkelson

There are no physical changes to MAN LAN. They decommissioned cross-Atlantic services for NLR.

WIX: Dale Finkelson

GEANT, ESnet and Internet2 peerings are now operational at the WIX. They are testing Open NSI protocols

StarLight: Alan Verlo

The GENI 14 meeting was held last week in Chicago and was supported by StarLight for demonstrations. StarLight is supporting demonstrations for the EuroView conference. StarLight is building a 100 G exchange. They will be supporting the GLIF meeting in October in Chicago. They are implementing their first Dynes node connection. They are moving from a T1600 to a 6506 for aggregation services for the LHC.

Ames Internet Exchange (AIX): Bobbie Cates

The AIX is asking for suggestions for implementing its dark fiber link.

AI: Contact Bobby Cates <bcates@mail.arc.nasa.gov> if you are interested in utilizing the NASA dark fiber link at Ames Research Center.

Meetings of Interest:

August 25-29	APAN, Colombo, Sri Lanka
October 1-4	Internet2 Fall Member Meeting, Philadelphia, PA
September 19-21	LHCONE & LHCOPN Meetings, Oslo, Norway
October 11-12	GLIF meeting, Chicago, IL
October 23-25	GENI Meeting, Houston, Texas
November 10-16	SC12, Salt Lake City, UT
January 10-11, 2013	HIC, Honolulu, HI
January 12	MPLS Workshop, Honolulu, HI
January 12	OpenFlow Workshop, Honolulu, HI
January 13-16	TIP2013 (joint APAN, ESnet & Internet2), Honolulu, HI < www.hawaii.edu/tip2013 > & < http://events.internet2.edu/2013/tip/ >
January 17-18	ESCC, Honolulu, HI
January 17-18	IPv6 Workshop, Honolulu, HI

January 17-18 Network Performance Workshop, Honolulu, HI
March 19-21 GENI Meeting, Salt Lake City, Utah

LSN Update: Grant Miller

The charters for JET and MAGIC are being updated to conform to FACA language. No substantive changes are required for JET. The JET charter was submitted to the LSN and approved. It will be signed by the CoChairs of the NITRD Subcommittee.

ARIN Report: Mark Kusters

IPv4 address space is virtually exhausted. There are 3.17 /8 addresses left. These are expected to be depleted by October 2013. ARIN will be deploying a secure routing space using PKI. ARIN seeks comments on this implementation. APNIC has run out of IPv4 address space.

JET Potential Topics for FY13

Eli Dart proposed a detailed task for the JET for FY13 focused on big data collaborations. It is a good proposal with multi-year efforts and proposed milestones and metrics. Comments from the JET members indicated that this proposal should be accepted with at least three science networks participating with 3-5 sites per network. Cees DaLaat should be approached to see if European networks will participate.

DREN III Update: Ron Broersma

Under the DREN III project, CenturyLink was awarded a \$750 million to provide new network infrastructure for DREN including:

- ALU routers and switches
- IPv6 and legacy IPv4 service
 - o Jumbo clean, uni- & multi-cast
- Optical networking (OWS, OTN, alien waves)
 - o Cloud solution, not point-to-point
 - o Priced to 38 location
- 100 G (service from 50 meg up)
- No ATM
- All network management done via v6

Kickoff was June 14-15 where initial sites were chosen and ordered for an Initial performance Capability (IPC). A protest was lodged against the award and decision is delayed until late September. DREN III will be more aggressive about private peering to other networks. They are in the process of identifying the best points to peer with other networks.

ESnet Dark Fiber Network: Inger Monda

ESnet has a US national footprint dark fiber network with 12,924 miles of fiber. There is a capability to light specific segments of the network or the whole network.. They are seeking projects to use this dark fiber in projects that will provide publishable research and not institute any commercial service. These projects might include new architectures, dynamic optical switching, new packet-optical networks, higher-speed

channels, superchannels, or 100 G waves.

AI: If you have proposals for use of the ESnet dark fiber please contact Inger Monga <imonga@es.net>

Current projects proposed for the dark fiber include:

- Quantum Key Encryption: proposal to DARPA; JPL/Boeing
- Reduced energy network: >90% reduction : ARPA-E proposal; Bell Labs, HP Labs, Texas instruments, UCSD, UoA, Columbia
- Packet-optical integration and >100 G

The colo space is not free and network use will require installation of amplifiers, terminals, and power.

Next JET Meetings

August 21, 11:00-2:00, NSF, Room II-415

September 18, 11:00-2:00, NSF, Room II-415