JET Meeting Minutes
April 25, 2017
Internet2 Global Summit Meeting
Renaissance Hotel, Washington, DC
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Action Items (carry over)

1. ESnet will give an update on its ESnet6 design and implementation at the July JET meeting.

Proceedings

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

Guam networking: Rommel Hidalgo and Alan Whinery

Guam networking has been intensively coordinating with Asian Pacific networking agencies through presentations and attendance at international venues such as the CENIC March conference where David Lassner discussed Guam connectivity. The U. of Hawaii maintains 2 x 100G links to Guam. In April Guam networkers talked to the NSF EPSCoR Program.

Pacific Islands Research Network (PIREN)/Guam Open Research Exchange (GoREX) maintains links to many of the Pacific Islands. PIREN is supported by an NSF IRNC grant. Guam provides connectivity for many large providers including Tata Station, AT&T, GoCOMO (Japan), AARnet, and Internet2. The GoREX discussion group has 29 participants and has an engineering breakout group that includes AARnet, Internet2, U. of Hawaii, and Pacific Northwest GigaPoP/CENIC. PolyREN provides connectivity to French Polynesia from Tahiti. It will connect in Hawaii, and is expected to be operational in the Summer of 2017.

nb: Rommel & Alan's slides are posted on the JET's web page. Please see them for additional detail.

JETnet Roundtable

CAAREN: Andrew Gallo

CAAREN is initiating an Internet2 security group pilot.

ESnet: Patty Giuntoli

ESnet is holding a 2-day review group session May 10-11 to consider the architecture options for ESnet6 and to choose a preliminary architecture design. They will reach out to some of the JET members for their input on the design.

Internet2: Matt Zekauskas

Internet2 is converting its Juniper MX960s for MPLS capability. GENI has started to implement its SDN overlay on Internet2. Corsa switches are providing a virtualization capability by supporting controllers for SDN using OpenFlow 1.3. Internet2 is moving R&E functions to their own virtualization environment. Connectors are being moved to more local boxes. Internet2 is testing the original ANA submarine cards for a non-regen NY<>LA path.

GENI: Heidi Dempsey

GENI is running trials over Corsa switches and is coordinating SDN services with GÉANT.

NIH: Mike Gill

Nothing new to report

NOAA: Robert Sears

NOAA is implementing 5 TICAPs. Three have been completed (Honolulu, Seattle, Dallas/Ft Worth). The two in DC and Denver, are still being completed. The DC TICAP is in partnership with the MAX where 10 years of NOAA legacy networking connections have to be reconfigured. Community TICAPs are being implemented at the Denver, DC, and Hawaii sites.

AmPath/AmLight: Jeronimo Bezerra

The AmPath/AmLight academic network to Sao Paulo is an Exchange point. They are working to implement interdomain trace routes. Networking is being implemented at 100G. The networking is being extended to Chile at 100G where the cable and infrastructure are already installed. AmPath/AmLight is partnering with the State University of Sao Paulo to implement 100G. The LHC staff is helping with the installation and testing.

BOREAS Net: Dave Farmer

BOREAS Net is implementing 1.2Tbps networking among the U. of Minnesota, Iowa State, U of Iowa and others. They are using 100G Arista switches for100G connectivity to Google and others.

AARNet: David Wilde via email

AARNet is part of a consortium building a new cable from Singapore to Perth to Sydney https://blog.google/topics/google-cloud/google-invests-indigo-undersea-cable-improve-cloud-infrastructure-southeast-asia/
https://news.aarnet.edu.au/new-subsea-cable-to-provide-additional-connectivity-between-australia-and-south-east-asia/
AARNet will have access to the spectrum of one quarter of one pair of fibers. This will initially provide up to 3Tbps of bandwidth, potentially increasing in future as optical technology advances.

NORDUnet: Erik-Jan Bos

NORDUnet has implemented an open exchange point in Helsinki. NORDUnet connects to Finland, Russia, the Baltic States and others. They are building a PoP in Hong Kong to support medical research collaboration by a Swedish university. This PoP will be turned up in Hong Kong in 2 weeks. Backhaul is planned to be minimum latency with a connection through Russia initially at 1G but moving to 10G or 100G soon. Backup connectivity is being provided by JGN (Hong Kong-Tokyo) and NII/SINET (Tokyo-London.) NORDUnet is exploring a Singapore exchange. They are participating in a North Atlantic collaboration. ANA provides 3 x 100G connectivity to the WIX and MAN LAN. One has been rehomed to the CANARIE operated Montreal exchange, MON-IX. A new New York to London link provides 100G connectivity for 4 x 100G total science networking across the Atlantic. NEAAR, ESnet and ANA are now working together to enhance the trans-Atlantic R&E capabilities.

African Connectivity: Sarah Kiden

There is an African networking users group meeting at 6:00 today. Please attend to hear about African networking.

APAN: Kazunori Konishi

APAN connectivity includes 2 x 100G from Singapore to the U.S. The NSF IRNC supports a 100G link to Japan. On October 1 a 100G link is expected to become operational in coordination with SingAREN (Singapore), Tokyo, and Seattle.

Exchange Points

MAN LAN: Matt Zekauskas

Nothing new to report

MAX: Dave Diller NOAA and NIST are implementing a testbed to NIST's site in Germantown, MD. There is an existing 100G MAX<>NIH (Bethesda) link. The NIST (Germantown/NOAA testbed will experiment using 100G baseband optics (Juniper) using DWDM NCFT but it is 15km farther than the NIH site. Max implementing cross-connects to Google, NetFlix, and others.

StarLight: Joe Mambretti

StarLight is working intensively on SDN/SDX deployment. They are using the Jupiter language out of UC Berkeley to implement flow management for science workflows. They are developing, under an IRNC grant, an SDX. StarLight supported the GENI demonstrations in Atlanta.

StarLight is preparing for the SC17 demonstrations. They expect to deploy 1Tbps networking between StarLight and the show floor using bonded light paths and Ethernet. There will also be a 400G end-to-end pathway between the show floor and StarLight. 100G Ethernet on the show floor will be implemented with 100G Ethernet cards. NRL and NASA are coordinating their connectivity through StarLight to the SC17 show floor. StarLight expects to solidify the technical specifications for each potential demonstration by the end of May or early June. Nick McKeown has developed a white box switch that they will be selling to AT&T and Google shortly. StarLight is implementing DTNs in coordination with Pacific Wave.

Pacific Wave: Dave Reese

Pacific Wave has deployed GNA exchange points with 100G to Tokyo, Seattle, and Sunnyvale CA. They are deploying 100G perfSONAR over Pacific Wave. They are working with ESnet to implement an AutoGOLE Pacific Wave using allocatable boxes. The Pacific Research Platform (PRP)/ Pacific Wave provides DTNs in Seattle and Tokyo for Pacific Wave participants. The PRP and DTNs are integrated to move data. Computational clusters and storage are placed close to these exchanges for integrated user services. An SDX in LA connects to StarLight at 200G. Pacific Wave is using DTNs as computational nodes which provide GPUs. You can use up to 300G as needed. Pacific Wave has 100G from Seattle to Tokyo and 100G LA to Tokyo. They expect to add additional Pacific Rim sites.

Pacific Northwest GigaPoP: Amy Phillipson, Jonah Keough

Nothing new to report

WIX: Matt Zekauskas

Nothing new to report

Update on SCinet plans: Scott Baily

SC17 network planning is underway. A call for connectivity will be issued soon. OTN is being implemented on the show floor. SC17 is interested in working with vendors who are interested in showcasing interesting and unusual applications so please notify SC17 staff of applications you will be demonstrating.

Meetings of Interest:

May 2-4	ESCC, Berkeley, CA
May 29 – June 2	TNC17, Linz, Austria
June 5-7	NANOG70, Bellevue, WA
June 26-26	US Ignite Application Summit, Austin, TX
July 9-13	PEARC17, New Orleans, LA
July 16-21	IETF99, Prague, Czech Republic
August 7-8	National Research Platform Workshop, Bozeman, Montana
August 26 – September 1	APAN44, Dalian, China
September 25-27	GLIF Sydney, Australia
October 2-5	ESCC, NSF PIs, & Quilt
October 5-6	ARIN 40, San Jose, CA
October 15-18	Internet2 Technology Exchange, San Francisco, CA
Nov 12-17	SC17, Denver, CO
Nov 12-17	IETF100, Singapore

Next JET Meetings:

May	May 16, 12-2 Eastern, NSF. This meeting will be coordinated by Paul Love and Ji Lee of the NCO
June	Jun 20, 12-2 Eastern, NSF
July	Jul 18, 12-2 Eastern, NSF