

JET Meeting Minutes

September 17, 2016

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Action Items

1. Contact Glenn Ricart <glenn.ricart@us-ignite.org> if you want to identify the local Smart Cities provider in your city

2. APAN is looking for good trans-Pacific applications. Contact Kazunori Kunishi <konishi@jp.apan.net>

Proceedings

This meeting of the JET was coordinated by Paul Love and Grant Miller of the NCO. It was held at the Internet2 Tech Exchange meeting and was open to network engineers and managers from all science networks.

JETNet Roundtable

CAAREN: Andrew Gallo

CAAREN has completed the 100G link into Equinix/Ashburn. CAAREN is refreshing their backbone.

Internet2: Matt Zekauskas

Internet2 is 2/3 of the way through their network refresh and will take another 6-8 weeks till completion. Pittsburgh is coming up soon. The current mix of Brocade and Juniper will move to Juniper equipment only. They are implementing an MPLS underlay with an SDN overlay using Brocades and PCs.

NASA: George Uhl

Nothing new to report

NOAA: Alex Hsia

NOAA turned up a node in Sunnyvale with VLANs to Pacific NorthWest GigaPoP and Denver. There is also a 1GE VLAN from Hawaii to Seattle. The Hawaii TIC was turned up. The Seattle TIC will be turned up next. There will also be TICs in Denver and DC. NOAA is testing E3A DNS components.

EUMETSAT: Dale Finkelson

The EUMETSAT project with Germany is using GEANT to connect to NOAA in Maryland and Colorado. They are currently moving data across a 10G port off the MAX to facilitate weather data transport.

REANNZ: James Wix

New Zealand is expanding its platform and consolidating routers to 480s. They are building 100G R&N networking around Auckland and have 100G connective outside the country. There is currently a bottleneck in the middle of the North Island.

NORDUnet: Lars Fisher

NORDUnet is researching using more commercial resources and are implementing peering points in the U.S. and Europe to expedite access to these resources. NORDUnet is sharing spectrum in Europe and sharing fiber with SURFnet. To implement a global network architecture, NORDUnet is increasing its trans-Atlantic capacity, especially to improve cloud resource access. They are helping Sweden to

refresh their network. The optical platform is a passive backbone. Juniper 100G routers provide multiple 100Gs to most universities and the light into the backbone. This approach has been very successful.

SANReN: Siju Mammen

South Africa has a 10G backbone for metropolitan networks and to all universities. They are acquiring fiber for a national backbone. SKA is a driver and they want to become a part of GNA. Undersea network capacity exists to both the East and West coasts of Africa. They would like to use some of that capacity in the GNA. GNA is a high level architecture being developed just now. They are converging on a Version 1.0 of documentation for GNA. A final version of this document is expected by the end of CY2016. The GNA technical group is being led by Erik-Jan Bos of NORDUnet and Jim Williams of Internet2 they welcome additional participants.

US Ignite: Glenn Ricart

US Ignite is implementing switches in metropolitan cities to provide local exchange points for local access only. US Ignite is shipping GENI Racks with GPUs to provide local processing for very-low-latency applications.

It is Smart Cities Week in DC. Four new cities (including DC) have been added to the Smart Cities initiative. They are planning to provide Gb connectivity for users.

AI: Contact Glenn Ricart <glenn.ricart@us-ignite.org> if you want to identify the local Smart Cities provider in your city

TransPac: Hans Addleman

TransPac is working with PacificWave and SINET to provide mutual backup.

NEAAR: Hans Addleman

Indiana University has received an NSF award for the Networks for European, American and African Research (NEAAR) project. This includes a 100G circuit to Europe to support improve connectivity in Western Africa. They are implementing perfSONAR in that region. Connectivity to Eastern Africa remains limited.

AARNeT: David Wilde

Australia recently completed improved connectivity outside of Australia, They now have 2 x 100G to the US. Connectivity to Asia goes from Perth to Singapore at 2.5G. They are hoping for an upgrade of this. A Sydney to Guam to Hong Kong link is upgrading to 10G with an option for 100G. There is a 10G link to Darwin with a potential option for optical connectivity. This link is not heavily used.

AARnet is working up the services stack. Backbone connectivity is basic and services are being developed now (Cloud, videoconferencing, and others).

Un of Minnesota: David Farmer

The Minneapolis IX is becoming a public exchange. It broke 100G last week and welcomes new R&E members. Northern Tier/BOREAS-Net is upgrading to 1.2Tbps. The eastern part of BOREAS-Net goes to Chicago and Minneapolis.

PacificWave: John Keough

PacificWave is implementing 100G upgrades in LA and Seattle in support of AARNet's trans-Pacific upgrade.

MAX: Don Wolfe

The MAX is installing 2 new PoPs: in Arlington, VA and K Street in DC. They are working with the Army lab to share their HPC resources with a wider user community. Tom Lehman is working on SDX services.

WIX and MAN LAN: Dale Finkelson

WIX and MAN LAN are configuring to support SC16. One of their ANA circuits is being rehomed to Montreal. It'll be reachable via CANARIE and is currently expected to be operational before SC. They are implementing a connection to Montreal before SC16 so Montreal can function as an exchange point.

StarLight: Joe Mambretti (via email)

With our national and international partners, the StarLight consortium is increasingly focused on planning for the Big Data/multi-100G/SCinet based to 1Tbps demonstrations for SC16, currently approximately 25 separate international, national, and venue based demonstrations.

Pacific Northwest GigaPoP (PNWGP): John Keough

PNWGP is working with TransPac to provide service and to implement perfSONAR.

NORDUnet: Lars Fisher

The NORDUnet exchange in Helsinki provides services for the Baltic States and Russian networks. Helsinki connects to NetherLight and London. NORDUnet is studying connectivity overland to Asia to reduce latency to Asian points. NORDUnet networking to Svalbard provides research connectivity at 20G to Norway; with plans to add 20G to support a new astronomy facility and other applications. The marine cable system can support speeds up to 100G.

Un of Hawaii/PIREN/Guam: Alan Whinery

Un of Hawaii is restoring their connectivity to 100G. Anyone having needs for connectivity through Hawaii, please attend the Hawaii Internet Consortium (HIC) meeting. To do so contact Alan <whinery@hawaii.edu>. The engineering group is talking with potential exchange points on Guam.

APAN: Kazunori Kunishi

APAN has connectivity from Singapore over TransPac and KREONet to Chicago and from Tokyo to LA.

AI: APAN is looking for good trans-Pacific applications. Contact Kazunori Kunishi <konishi@jp.apan.net>

UEN: Jim Stewart

Running 277 miles of fiber to support the Four Corners region.

SC16 Connectivity: Jim Stewart

There are currently 34 x 100G links scheduled into the Salt Palace for SC16 demonstrations. Infinera is implementing links this week (25 of the 34 links). SCinet is working closely with Joe Mambretti to support his many applications.

David Wilde indicated that one SCinet application being demonstrated is a CERN 53 TB data transfer from Germany through GÉANT to NORDUnet, MAN LAN, Internet2, PacificWave across ALEC to Australia (Melbourne).

Meetings of Interest:

October 15-16	DNS-OARC 25 , Dallas, TX
October 17-19	CANS2016 , Houston, TX
October 17-19	NANOG68 , Dallas, TX
October 18-21	ESCC/Quilt/NSF PIs , Philadelphia, PA
October 20-21	ARIN 38 , Dallas, TX
November 13-18	IETF 97 , Seoul, South Korea
November 13-18	SC16 , Salt Lake City, UT
November 22-23	CANARIE National Summit 2016 , Montreal, QC
December 12	GENI NICE 2016 , Irving, CA
January 15-18, 2017	PTC'17 , Honolulu, HI
January 25-26	HIC , Honolulu, HI
February 6-8, 2017	NANOG69 , Washington, DC
March 26-31	IETF 98 , Chicago, IL
April 2-5	ARIN 39 , New Orleans, LA
April 23-26	Internet2 Global Summit , Washington, DC
May 29 – June 2	TNC17 , Linz, Austria
June 5-7	NANOG70 , Bellevue, WA

Next JET Meetings:

October 18	12:00-2:00 EDT, NSF
November 16	3:00-5:00PM MST, Ballroom C, Salt Palace Convention Center, Salt Lake City, UT nb: Concurrent with SC16
December 20	12-2 EST, NSF (nb: Held only if required)
January 17, 2017	12-2 EST, NSF