JET Meeting Minutes
November 17, 2015

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Action Items
 1. Paul Love will place perfSONAR deployments on the January agenda.

Action Items – carry forward
1. Bobby Cates will arrange for a DHS presentation on TICs to the JET

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

Network Roundtable

NOAA: Dave Hartzell
NOAA is working on completing its TIC deployments. There will be 4 of them with DC and Denver being the largest TICs. They will serve primarily NOAA but other agencies will be invited to participate in these TICs. NOAA is building X-Wave outside the TICs to peer with other agencies. NOAA will peer in McLean, Virginia, college Park, Maryland, Denver, Seattle, Dallas/FortWorth and perhaps Ashburn. They will also peer at the Hawaii TIC if other agencies request it. In the Bay area, NOAA is looking at Sunnyvale for peering. DREN request to peer at 2 of the NOAA sitres. Big data flows will be outside the TICs.

NASA/Ames: Kevin Jones
Bobby Cates is reaching out to DHS to give a presentation to the JET in January on the Einstein 3 deployment. DREN is upgrading their Ames connection to 10G

NASA/GSFC: Bill Fink
NASA is completing its corporate route symmetry as a precursor to implementing TICs planned for the end of the fiscal year.

ACE:
ACE is working with Hibernia to renew the Frankfurt to U.S. links

DREN: Ralph McEldowney
DREN has completed 40G upgrades to DREN centers. They are implementing 10G connectivity at NASA Ames in the Bay area by the end of this calendar year. DREN is looking at other agencies and CenturyLink to implement enhanced cybersecurity. DREN is implementing a USIgnite project. DREN is currently providing networking between Maui and CONUS and across the U.S. DREN is partnering with CenturyLink on a pilot project to implement a Layer2 solution for traffic

ESnet: Nick Buraglio
ESnet is developing a data center redesign and starting ESnet6 planning. They are doing SDN experimentation in a 400G pilot program from Oakland to Berkeley.

Internet2:
Internet2 is implementing some replacements and some upgrades to fix their soft failure issues. Internet2 experience an outage last week due to a faulty upgrade.

AI: Paul Love will place perfSONAR deployments on the January agenda.

NIH: Don Preuss
NIH is completing their internal campus upgrades. They are deploying perfSONAR.

NRL: Linden Mercer

NRL is running 2 x 100G links for their SC15 demonstration. They are running SDN extended to Washington DC. At future SCs they will offer this capability to other agencies.

APAN: Takatoshi Ikeda
The Kitamura 2 x 100G replacement link is running. APAN is doing demonstrations at SC15. Japan plans to build an additional 100G link to the US and 2 x 10G to the EU connecting to GEANT going through Russia. APAN is deploying perfSONAR.

PacWave: Dave Reese
PacWave is undergoing a technology refresh. They are supporting the Pacific Research Platform which now has global partners. TransPac Pacific Wave is operational. Shinagawa will be an open exchange point in the Tokyo area for PacWave in cooperation with WIDE. Connectivity was added to Denver, Alburqueque, and Seattle. An El Paso to LA link is being completed. A SINET 100G link is planned for April 2016. A 100G link between Seattle and Chicago is planned soon. A new cable connects Hawaii to CAREN, the Pacific Islands and guam. PacWave is scheduling meetings to discuss planning for the 2-5 year time frame with a focus on big data flows.

USDA: Victor Unruh
The USDA research service is building a science DMZ at 6 locations (out of 100 USDA locations) and is implementing service to the west coast with Internet2 as a partner.

AARNET: Jamie Curtis
AARnet is working with CSRIO on SKA technology. They are completing router upgrades for 2 x 100G service that will service New Zealand as well. They are upgrading the Sydney to Guam link. An SDN testbed is running well (locally in Australia). David Wilde is in charge of this testbed.

GEANT:
GEANT is running dark fiber in the west to implement 100G. Other areas are running multiple 10Gs. There is a 100G Paris to New York link; 340G from ESnet, 200G from ANA. A 10G link to Singapore was renewed. The Mumbai link is being upgraded to 10G. Africa is connected by 2 x 10G to London plus EUMed connectivity to Northern Africa. There is a submarine cable to South America. Richard Hughes is working with TANE for connectivity to Singapore. The LHC1 VRFs are working with TANE. RNP in Brazil is connected to LHC1.

NASA/GSFC: Bill Fink
Bill Fink has established a 100G path from NASA GSFC to SC15, including NICs(Mealnox). ESnet provided the dedicated 100G link to the show floor. They are demonstrating 80Gbps disk-to-disk transfers. They are trying to implement a 100G firewall and demonstrate performance through the firewall. They have demonstrated

60Gbps and are trying to increase this capacity. The EOS project is working to implement a 100G link to the MAX.

LEARN:
　　LEARN is peering at 100G with ESnet

StarLight: Joe Mambretti
　　StarLight is working with Dave Reese of the Pacific Northwest GigaPoP (PNWGP) to implement a 100G link to StarLight. A new Design Center in Chicago is implementing large-scale data flows through StarLight. NSF IRNC has funded StarLight to implement SDX. They are implementing nodes at the PNWGP and at Ames Research Center. They are in discussions with Singapore to implement an SDX. Taiwan and KISTI are implementing 100G links to StarLight.
　　15-20 100G demonstrations are being held in booth 749 at SC15. The demonstrations include a computational bioinformatics SDX, orchestration tools, and Cal Tech SDN steering to expedite data flows. Other data demonstrations include Microsoft, Google, and OCC.

Thanks to CenturyLink
　　Thanks to CenturyLink for providing 4 x 100G to the big data demonstrations in Joe Mambretti's booth plus an additional 2 x 100G to support Linden Mercer's demonstration in this booth.

NSF's International Research Network Connection Program: Kevin Thompson
　　Networking programs in CISE/ACI include:
-　Networking as a fundamental layer
-　CC*DNI/CC/NIE/CC-IIE
-　IRNC international R&E network connections joint with OIA/ISE

　　Networking is not just about bigger pipes but includes re-architecting the campus border, how the networks serve the campus CI plan, and driving partnerships between scientists and campus IT.
　　IRNC connections support all science and education, not just NSF programs. New 5-year awards were made in 2015 moving to 100G+ connections. Investments are ~$40M over 5 years. Connectivity to Africa has been greatly improved with submarine network links along both the Atlantic and Indian Ocean coasts and links to Northern Africa.
　　NSF provides the networking infrastructure to support the LSST with links across south America, to the U.S. (Miami) and to Europe. The IRNC RXP program provides support for international Open Exchange Points in the U.S., encourages SDN support, and requires a security plan. IRNC awards also support an international NOC, measurement infrastructure, and support for education and training.
　　IREN is an NSF program to globally develop and coordinate future strategy for R&E networking.
　　IRNC links include ACE (U.S. to Europe), AmLight (South America), TransPac (Japan/Asia), and SXTransport (Australia, New Zealand, and the Pacific Islands).

AmLight Express will provide South American connectivity from 2018+ and includes 300GHz of spectrum.

RXP provides a central hub at StarLight for international OpenFlow. It supports an SDX at StarLight

For the complete briefing please see:
https://www.nitrd.gov/nitrdgroups/index.php?title=JET_Meetings_2015 under November 2015.

Meetings of Interest:

November 1-6   IETF94, Yokohama, Japan
November 10   GENI NICE, San Francisco, CA
November 15-20   SC15, Austin, TX
December 10-11   GENI Future Plans Workshop, Washington, DC
2016 Meetings
February 8-10   NANOG66, San Diego, CA
April 3-8   IETF95, Buenos Aires, Argentina
April 17-20   ARIN 37, Montego Bay, Jamaica
May 15-18   Internet2 Global Summit, Chicago, IL

Next JET Meetings:
January 12, 2016, 11:00-2:00, NSF