JET Meeting Minutes
November 19, 2014

Participants

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Action Items
1. If you wish to participate in the Emerging Technology Coordination (ETC) group, please contact Grant Miller at: miller@nitrd.gov.
2. If you are interested in using the NOAA DC area ring, contact Rob Sears <robert.sears@noaa.gov>.

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

Emerging Technology Collaboration (ETC): Grant Miller
A new group, the Emerging Technology Collaboration (ETC) group has been established to coordinate the demonstration and prototyping of new (bleeding edge) research concepts being developed by the research community. Architects, engineers, developers and prototyping networks coordinate the initial prototyping of the new technologies over networks that are persistent (over the period of the prototype) but can be broken without disrupting other networking capabilities. A charter for this group has been developed and the initial teleconference meetings have been very useful for the participants to coordinate SDI capabilities on prototype networks. They met at SC14. Their next teleconference meeting will be in January 2015. The next meeting in person will be at the Internet2 Global Summit.

AI: If you wish to participate in the Emerging Technology Coordination (ETC) group, please contact Grant Miller at: miller@nitrd.gov.

Network Roundtable
DREN: Phil Dykstra
      The DREN transition to DREN III is now complete. They are beginning to focus on new technology and are doing some work with GENI. They are performing 40G service tests with TCP bidirectional flows. They are evaluating 100G equipment and are waiting for 100G NICs. DREN will make the results of their tests of 100G equipment available to others. DREN is supporting an NRL demonstration by Linden Mercer demonstrating 100G flows out of a single box to Joe Mambretti's SC14 booth. DREN is looking for additional points for transit and peering. DREN maintains commercial peering in LA, Ashburn, and Seattle. They can reach NASA Ames over a PacificWave VLAN at 10G.

ESnet: Vince Dattoria
      The European extension of ESnet is operating smoothly. The European connectivity is 3 x 100G + 1 x 40G on diverse cables. Two of these circuits have been tested; the other two are installed and are entering testing. They will be turned-up in January.

Internet2: Matt Zekauskas
      Internet2 has installed virtualization over layer 2. They have a new node in Indianapolis. The Brocade switches have had a code upgrade. The Brocades are running OpenFlow

NIH: Don Preuss
      NIH is bringing-up a 2nd 100G. NIH is implementing a 100G loop on its campus with 10G links to sites. They are beginning to discuss upgrading some of the links to 100G. HHS's infrastructure is coming along.

NOAA: Dave Hartzell & Rob Sears
      On November 3 NOAA began to install its first TICAP. This is located in Honolulu/Pearl Harbor, HI, and will be a multi-agency TICAP. The next TICAP will be in Dallas with a target of Jan. The NOAA TICAPs will be connected on the "outside" by a peering network (X-Wave).

      In the DC metropolitan area a Ciena DWDM ring is being deployed. It will connect McLean, VA, and 3 locations in MD - Silver Spring, Suitland and College Park. The Suitland to McLean link is a new build; the other elements of the ring are leased IRUs. The ring will support the DC area TICAP that will be started in February/March 2015. Then TICAPs will be installed in Denver and Seattle.

      NOAA moved 5 x T1s in Fairbanks, AK, to 100meg Ethernet service. It connects to Seattle and will make use of the Seattle TICAP.

AI: If you are interested in using the NOAA DC area ring, contact Rob Sears <robert.sears@noaa.gov>.

NRL: Linden Mercer

The NRL ATDnet is now dormant.

PacificWave: Celeste Anderson & Jonah Keough

PacificWave has a 100G link to the University of Victoria for SC. It will move to a permanent link to CANARIE in Vancouver after SC.

ANA 200: Matt Zekauskas

The ANA 2 x 100G links across the Atlantic were accepted for service just before SC14. It provides 100G from MAN LAN to Amsterdam and 100G from WIX to London. There is also a 100G link between London and Amsterdam. The last link, 100G for WIX<>MAN LAN, will be installed after SC.

Exchange Points Roundtable

PNWGP: Jonah Keough

Nothing to report

StarLight: Joe Mambretti

StarLight has 30 100G links now. They are supporting 12 sets of 100G demonstrations at SC14. The SDX at StarLight has been running for over a year now. It connects SDN single domains, primarily Layer 2. The SDX is a big virtual switch that enables a granulated view of the networking. Control of flows can be managed by edge devices. Virtual switches can be placed inside the SDX virtual switch providing recursive virtualization capabilities. The StarLight SDX supports a customized exchange for bioinformatics. Operationally it looks like they have their own exchange that they control. The SDX can also support a customized exchange for media with 4K, 8K… video. With Japan, StarLight is doing a slice exchange with compute resources, sensors, and other resources. One of the SC14 demonstrations is showing end-to-end 100G science exchanges within an SDX, which didn't exist before.

MAN LAN & WIX: Matt Zekauskas

Nothing to report

CC-IIE Programs: Kevin Thompson

The Campus Cyberinfrastructure program just completed its 3rd year. There is a current program solicitation for campus upgrades and improvements including implementing a Science DMZ, increasing inter-campus capacity, and increasing bandwidth to Internet2. It also provides for integration and innovation including developing and applying SDN at the campus level and named domain networking. It provides funds for small institutions, for campus cyberinfrastructure engineers for working with science users and for regional coordination. State and regional coordination were awarded 135 awards across 46 states in the first 3 years (including 50 in 2014.) A new solicitation is under development at the NSF.

SC14 Demonstrations: Joe Mambretti, Linden Mercer

The SDX at StarLight is a large virtual switch with a lot of resources under that switch. It is supporting a Nowcast project under GENI to transmit small-form Doppler

radar data for incorporation in near-real-time weather modeling. This demonstration was extended to Amsterdam (TERENA) for the SC14 demonstration. Previously, for the GLIF conference in New Zealand, worldwide weather forecasting was demonstrated.

Fiona is a custom box under ExoGENI. It supported demonstrations between UCSD to StarLight to Amsterdam with 40G and 100G flows. ESnet is supporting many of the SC14 demonstrations. Links to the SC14 booth include 100G testbed connecting to StarLight to Seattle, 100G private to Ciena, and 100G private to NASA Goddard Space Flight Center (GSFC). GSFC has a 100G Acadia NIC card and there is a 100G Acadia NIC card on the SC14 show floor. They are demonstrating the first 100G NIC flows and reached 70G.

Another demonstration is using Argonne high performance disk arrays from Argonne to Ottawa to the SC14 booth. They are reaching 90G using Grid FTP.

Cal Tech has assembled a 10 x 100G network around the SC14 show floor

Ciena is supporting 100G from Hanover to Ottawa, StarLight and New York.

Linden Mercer is demonstrating distributed processing over a global area. Data from multiple sites is using central computing resources and returning data products to users. It connects Oakland, StarLight, Washington, DC, and the SC14 show floor. The DC to SC14 link also is deploying 100G encryption over Ethernet.

We need to start planning now for SC15. SCinet did not support SDN directly but it should be prompted to support SDN for SC15

There was brief discussion of what science could do if 1T was available. Also how hard it is to measure programmable networks.

LSN Update: Grant Miller

LSN approved of the JET suggested tasking for FY15. There will be an SDN follow-on workshop tentatively in the July 2015 time frame

Meetings of Interest:

January 21-22,	perfSONAR Deployment Best Practices, Architecture, and Moving the Needle, Columbus, OH
February 2-4, 2015	NANOG63, San Antonio, TX
February 10-11	CrossConnects Cosmology Workshop, Berkeley, CA
March 1-6	APAN39, Fukuoka, Japan
March 22-27	IETF92, Dallas, TX
March 23-26	GEC22, Washington, DC
March 24-25	ESSC. LBNL
April 26-30	Internet2 Global Summit, Washington, DC
April 30-1 May	Big Data Networking (at the Internet2 Global Summit)
June 1-3	NANOG64, San Francisco, CA
June 15-18	TNC2015, Porto, Portugal
June 15-18	GEC23, Urbana Champaign, IL
July 14-17	SDI next steps planning and coordination, Berkeley, CA
July 19-24	IETF93, Prague, Czech Republic

Next JET Meetings:
January 20, 2015 11:00-2:00, NSF
February 17, 2015 11:00-2:00, NSF