



Joint Engineering Team (JET) Meeting Minutes

National Coordination Office for Networking and Information Technology R&D (NCO/NITRD)
490 L'Enfant Plaza SW, Suite 8001, Washington, DC 20024
September 17, 2019, 12:00-2:00p.m. ET

Participants (* in person)

Nick Buraglio, ESnet	Ed Moynihan, Indiana University
Michael Gill, NIH	Aruna Muppalla, NASA/GSFC
JJ Jamison, Juniper	Glenn Ricart, US Ignite/University of Utah
Kevin Kranacs, NASA/EOS	Kamie Roberts, NCO/NITRD*
Paul Love, NCO/NITRD*	George Uhl, NASA/GSFC
Michael Lambert, PSC/3ROX	Chris Wilkinson, Internet2

Proceeding: This meeting was coordinated by Paul Love (NCO/NITRD).

I. Action Items:

- Ongoing discussion of LSN's Strategic Plan and the JET's role in it.
- ESnet update on its operational network security use of Rapid7.
- Internet2 to give finer details on its optical rollout plans.

II. **Review of the Minutes** of the August 2019 meeting: No corrections were offered during the meeting. (*Note:* None were received during the balance of the week).

III. **Operational network security roundtable** (only those who had comments are noted)

- ESnet (Nick Buraglio): Work continues on the Zeek on the WAN project. ESnet continues to deal with the issues of back hauling traffic and asymmetric routes.
- 3ROX (Michael Lambert): PSC/3ROX has signed ROAs with ARIN for some of PSC' prefixes and has verified that these now show up as valid. It will take some time to fully implement for RPKI.
- International Networks at Indiana University (IU-IN) (Ed Moynihan): No operational network security updates. IU-IN will be attending the Cyber Security Summit in October.

IV. **Networks Round Table**

- ESnet (Nick Buraglio):
 - ESnet5: ESnet is doing rolling upgrades to the ESnet5 gear - replacing old MX480s, etc.
 - ESnet6: ESnet is well into the details of the deployment and transition. The completed optical Request for Quotation will have its final review in October and can then be formally announced. The packet Request for Proposal (RFP)'s ETA is December. This will also include the network management system, PCs, etc. that

will be used to run the new network. ESnet6 will be highly automated and orchestrated.

- B. International Networks at Indiana University (IU-IN) (Ed Moynihan):
 - a. Network for European, American, and African Research (NEAAR): The perfSONAR (pS) workshop was completed in Mozambique. Twenty four universities attended. As a result there will soon be a pS MaDDash mesh for all UbuntuNet Alliance countries. The pS boxes are now available for testing.
 - b. IU-IN attended a meeting with the Large Synoptic Survey Telescope (LSST) network, GÉANT and RENATER to discuss if NEAR could support moving some LSST data from the US to France. These discussion are expected to continue over the next couple of months.
 - c. TransPAC: Network is stable – no changes.
 - d. perfSONAR: Next workshop is scheduled for the March APAN meeting in Nepal.
- C. Internet2 (Chris Wilkinson): No substantive updates. Internet2 continues to do metro area improvements for I2PX (née TR/CPS). The packet RFP for Internet2's next gen network is currently due out in early October.
- D. NASA (Kevin Kranacs): Steady state – no changes.
- E. NIH (Mike Gill): No changes.
- F. 3ROX (Michael Lambert):
 - a. Nothing new for 3ROX or PSC.
 - b. Extreme Science and Engineering Discovery Environment (XSEDE)'s 100G perfSONAR boxes have been deployed and are being tested. A mesh should be up within the next few weeks – certainly before SC. XSEDE is developing procedures to permit new sites to be added seamlessly.

V. Exchange Points Round Table

- A. StarLight (Joe Mambretti via email): The StarLight International/National Communications Exchange Facility is working with the SCinet Wide Area Network (WAN) group and other partners to prepare for supporting SC19 demonstrations. Planned circuits include 10x100 Gigabits per second (Gbps) paths from StarLight to Denver (SC19), one 400 Gbps path from StarLight to Denver, 6x100 Gbps from Washington, DC, to Denver, and 2x100 Gbps from Washington DC to StarLight. StarLight this week is also supporting the Americas' Research Platform Workshop, the Global Research Platform Workshop, the Global LambdaGrid Workshop, the Global Networking Advancement Group (GNA-G) meeting, and the AutoGOLE workshop which all take place this week at the University of California at San Diego.
- B. Internet2 (Chris Wilkinson):
 - a. MAN LAN: The first half of a major hardware upgrade done last night with the second half scheduled for tonight.
 - b. WIX: A similar upgrade is planned. The hardware is on hand but the upgrade is not yet scheduled.

VI. Discussion on possible JET tasking for CY20

- A. In addition to the recurring tasks there are two new proposed tasks:
 - a. Tracking segment routing.
 - b. Coordination of the development of the tools needed to monitor cross domain workflows and to facilitate the sharing of measurement data between networks – anonymize as needed.
- B. Discussion followed:
 - a. Nick Buraglio is very interested in segment routing as it maps with what ESnet is planning. He would like to be involved it whatever develops.
 - b. Question: Is ESnet looking at SRv6+? No, as there aren't many hardware options and it still seems to not be mature enough. It is looking at SR-MPLS.
- C. It was agreed to forward the proposed tasking suggestions to the LSN.

VII. Outline of Internet2's Optical Deployment – Chris Wilkinson

- A. Ciena is Internet2's optical partner for its next gen network. It is working with CenturyLink (CTL) on the deployment planning. Internet2 has used CTL for its NOC and professional services and are intending to continue to do so. They will be building the new flex grid infrastructure on top of the existing fixed grid infrastructure. This will permit the services to be transitioned city by city. Right now it's expected to take about 13 stages across the country. The roll out order and the related maps will be shown next month.
- B. The initial goal was for the rollout to take 12 months. It now looks like it will be completed by the end of 2020. One of the drivers to the schedule and sequence is making 400G available as soon as possible. Having the 400G linear system from Chicago (StarLight) to Denver (SC19) ready for SC will be very tight.

Meetings of Interest 2019

Oct 28-30	NANOG77 , Austin, TX
Oct 30 – Nov 1	ARIN 44 , Austin, TX
Nov 16-22	IETF 106 , Singapore
Nov 17-22	SC19 , Denver, CO
Dec 9-12	TechEX19 , New Orleans, LA

Meetings of Interest 2020

Jan 15-16	HIC , Hilo, HI
Jan 19-22	PTC'20 , Honolulu, HI
Feb 10-12	NANOG78 , San Francisco, CA
Mar 2-6	APAN49 , Kathmandu, Nepal
Mar 3-4	ESCC , Berkeley, CA
Mar 21-27	IETF 107 , Vancouver, BC, Canada
Mar 29 – Apr 1	Internet2 Global Summit , Indianapolis, IN
Apr 7-8	US Ignite Application Summit, Denver, CO
Apr 26-29	ARIN 45 , Louisville, KY

Next JET meetings

Oct 15, 2019 12-2 p.m. ET

Nov 19, 2019 10 a.m. - 12 p.m. MT

n.b.: This meeting is concurrent with SC19. It will be held in room 711 of the Colorado Convention Center. Remote access is expected to be available.

Dec 17, 2019 12-2 p.m. ET

n.b.: This meeting will be held only if needed.