



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

October 15, 2024, 12:00 – 2:00 p.m. ET

This meeting was held virtually

Participants

Jeff Bartig, Internet2

Basil Decina, NRL

Bill Fink, NASA/GSFC

Michael Lambert, PSC/3ROX/ACCESS

Paul Love, NCO/NITRD

Joe Mambretti, StarLight/MREN

Ralph McEldowney, DREN

Linden Mercer, NRL

Aruna Muppalla, NASA/GSFC

Jay Stewart, ESnet

Nik Sultana, IIT

Simon Szykman, NITRD

Kevin Thompson, NSF

Proceeding: This meeting was chaired by Kevin Thompson (NSF) and Ralph McEldowney (DREN).

I. **Action Items:** (none pending)

II. **Review of the Minutes of the September 2024 meeting:** No corrections were received. The final minutes have been posted on the JET's web page.

III. **Operational Security Round Table:** No updates this month.

IV. **Network roundtable**

A. DREN (Ralph McEldowney):

- a. The Hawaiian Intranet Consortium (HIC) is tentatively set for 29-30 January 2025 on Oahu hosted by NOAA at its facility on Ford Island.

Note: Subsequently the location has been changed to the Hale Ikena Community Activity Center on Fort Shafter. The dates have been confirmed as 29-30 January.

B. ESnet (Jay Stewart): No major updates today.

C. Internet2 (Jeff Bartig):

a. SC24:

- i. A good number of staff are part of SCinet this year.
- ii. Internet2 (I2) is really ramping up its preparations to ensure that the bandwidth and circuits needed into Atlanta and at remote demo sites are set.

- b. I2 is continuing its efforts on improving BGP routing security between I2 and the networks it peers with. I2 is working with some of its NREN peers on improving

how routing data is documented in the IRRs. This to make sure it's trusted sufficiently to use to build route filters. The goal is to improve how I2 filters traffic from its NREN neighbors.

- c. ESnet and GÉANT are already making progress on this. ESnet, as has I2, has run into incomplete data. It's taken the approach of filling what's missing to the extent that it can then build usable filters. GÉANT is still working out the details of its approach but seems to be leaning towards relying on what is in, or not in, the IRRs. GÉANT intends to only using authenticated IRRs.
 - i. This would exclude the RADB and Level3, for example, since non-owners can make entries. From a contrary point of view, many ISPs and R&E networks make entries for their downstream customers/members.
 - ii. The down streams will have to do much more with just authenticated IRRs. Many received their block decades ago, the staff who got it are now retired, and in many cases the current staff don't have the needed expertise with BGP and IRRs.

Note: Using RADB, or AltDB, doesn't require an LRSA with ARIN.

Question: Are there issues with building useful filters? Are there issues with ambiguities in the IRR entries?

Answer: Very much issues. Steve Wallace (at I2) spends a lot of time looking at filters and working with downstream members on them, rules for as-sets, what's in PeeringDB. Plus there's the issue of all networks just keeping their IRR information up to date.

Question: Who is best placed to solve these problems? Is it in the scope of standardization bodies? Or a consortium of vendors or in academia? Or more an issue for practitioners?

Answer: It's on the practitioner side. But they are overworked, many senior staff have retired or migrated into the commercial sector. Either causes a loss of knowledge to the R&E networking community. Adding to this problem are the budget cuts many institutions have experienced making it hard to replace staff. The commercial sector is also facing some of the same issues due to fewer people interested in becoming network engineers.

D. NASA/GSFC (Bill Fink): No updates this month.

E. NRL (Linden Mercer):

- a. NRL is ramping up its preparation for SC24 next month. Some technical issues remain to be resolved.
- b. SCinet and NRL hoping to have time in Atlanta to discuss doing even more next year at SC25. Perhaps 800G coherent pluggables next year. Or other 800G items. Perhaps getting the server industry more engaged as there is a need for more capable servers.

F. PSC/3ROX/ACCESS (Michael Lambert): No updates this month.

V. Exchange Points Round Table

- A. WIX/MAN LAN/Boston (Jeff Bartig):
 - a. Nothing significant this month.
 - b. Due to a scheduled maintenance this past week there was a several day outage on the 400G between Boston and Paris.
- B. StarLight (Joe Mambretti):
 - a. Last month's Global Research Platform Workshop (GRP) in Osaka, Japan, was particularly successful. The next GRP, and the IEEE conference on eScience with which the GRP is collocated, will be in Chicago, IL.
 - b. Upcoming meetings:
 - i. There will be a mini-GRP during the SCA25 in Singapore next March.
 - ii. The next National Research Platform Workshop (NRP) will be at UCSD the last week of January.
 - iii. An LHC networking meeting is scheduled for April in London, UK, tied into a SKA meeting.
 - iv. TNC25 will be next June in Brighton, UK.
 - b. For SC24 next month StarLight (SL) continues to work with national and international colleagues help develop the SCinet testbed. The physical provisioning is nearly complete and the focus has shifted to provision the needed VLANs.
 - c. The GRP and NRP along with SDX services and their interoperability will be shown in Atlanta.
 - d. A key piece, as Linden Mercer mentioned, is 400G disk-to-disk across the WAN. Perhaps 800G can also be shown.
 - e. A major goal is to show a 1.2T across the WAN for data intensive science. This would be made up of 3x400G with each 400G having a Gen 5 DTN on each end.
 - f. With the CERN networking community there will be a demo of the scitags packet marking project for orchestration over a 400G path. This makes use of ESnet's High Touch system.
 - g. The NA-REX 400G exchange point interconnection will be connected to SCinet. There will be some international extensions including a new 400G node in CERN. CERN existing FABRIC node is being upgraded to 400G.
 - h. SL will also be demonstrating various aspects of DTNaaS, P4, AutoGOLE/SENSE, programmable networking with Kubernetes, the Open Science Grid, the Open Data Grid and the integration of FABRIC and Chameleon.
 - i. With ESnet SL will be showing a piece of the Gamma-Ray Energy Tracking Array (GRETA) project. GREAT's network will use in-net processing to do data analytics.
 - j. In conjunction with ANL SciStream will be demonstrated at SC.
 - k. SL will also be working with the Poznan Supercomputing and Networking Center (PSNC) on a distributed quantum networking with quantum key distribution.

Meetings of Interest 2024

- Oct 21-23 [NANOG 92](#), Toronto, ON Canada
- Oct 24-25 [ARIN 54](#), Toronto, ON Canada

Oct 28 – Nov 1	RIPE 89 , Prague, Czech Republic
Nov 2-8	IETF 121 , Dublin, Ireland
Nov 17-22	SC24 , Atlanta, GA
Dec 9-12	Internet2 Technology Exchange , Boston, MA
Jan 19-22, 2025	PTC25 , Honolulu, HI
Jan 28-30, 2025	6NRP , San Diego, CA
Jan 29-30, 2025	HIC , Honolulu, HI
Feb 3-5, 2025	NANOG 93 , Atlanta, GA
Feb 3-6, 2025	The Quilt Winter Meeting , Tempe AZ
Mar 3-7, 2025	APAN59 , Yokohama, Japan
Mar 10-13, 2025	SCA25 , Singapore
Mar 15-21, 2025	IETF 122 , Bangkok, Thailand
Mar 27-30, 2025	ARIN 55 , Charlotte, NC
Apr 28-May 1, 2025	Internet2 Community Exchange , Anaheim, CA
May 12-16, 2025	RIPE 90 , Lisbon, Portugal
Jun 9-11, 2025	NANOG 94 , Denver, CO
Jun 9-13, 2025	TNC25 , Brighton, UK
Jul 19-25, 2025	IETF 123 , Madrid, Spain

Next JET meetings

Note: It is anticipated that most JET meetings will remain virtual for the foreseeable future

Nov 20, 2024	10:15-11:45AM ET. This will be a hybrid meeting held in conjunction with SC24 in Atlanta, GA. The meeting will be in room A-313 of the Georgia World Congress Center, 285 Andrew Young International Blvd NW, Atlanta, GA 30313
Dec 17, 2024	12-2 p.m. ET <i>n.b. This meeting will be held only if needed.</i>
Jan 21, 2025	12-2 p.m. ET