

JET Meeting Minutes
May 21, 2013

I. Participants

Shawn Armstrong	UAF	svarmstrong@alaska.edu
Jeff Boote	Sandia	jwboote@sandia.gov
Eric Boyd	Internet2	eboyd@internet2.edu
Joe Breen	Un of Utah	Joe.Breen@utah.edu
Rich Carlson	DOE-SC	Richard.carlson@science.doe.gov
Bobby Cates	NASA/Ames	bcates@mail.arc.nasa.gov
Sean Connelly	DHS	Sean.Connelly@hq.dhs.gov
Eli Dart	DOE/ESnet	dart@es.net
Vince Dattoria	DOE/SC	vince.dattoria@science.doe.gov
Patrick Dorn	ESnet	dorn@es.net
Bill Fink	NASA/GSFC	bill@wizard.sci.gsfc.nasa.gov
Dale Finkelson	Internet2	dmf@internet2.edu
Mark Foster	NASA/Ames	mark.foster@nasa.gov
Andy Germain	NASA/GSFC	Andrew.M.Germain@nasa.gov
Mike Gill	NIH/NLM	gill@nlm.nih.gov
Kevin Jones	NASA/GSFC	kevin.L.jones@nasa.gov
Kevin Kranachs	NASA/GSFC	Kevin.Kranachs@nasa.gov
Michael Lambert	PSC	lambert@psc.edu
Michael Laufer	NOAA	michael.laufer@noaa.gov
Paul Love	NCO	epl@sover.net
Bradley Lundy	DHS	Bradley.Lundy@associates.hq.dhs.gov
Bryan Lyles	NSF	jlyles@nsf.gov
Joe Mambretti	StarLight/MREN	j-mambretti@northwestern.edu
Linden Mercer	NRL	linden@cmf.nrl.navy.mil
Grant Miller	NCO	miller@nitrd.gov
Inder Monga	DOE/ESnet	imonga@es.net
Sara Mosely	DHS	sara.mosley@hq.dhs.gov
Mark Mutz	NOAA	Mark.Mutz@noaa.gov
Don Preuss	NIH/NLM	Donp@ncbi.nlm.nih.gov
Kristin Rauschenbach	GENI/Raytheon	krausche@bbn.com
Don Riley	U Md	driley@umd.edu
Chris Robb	Internet2	chrobb@internet2.edu
Martin Swany	Indiana U.	swany@iu.edu
Brent Sweeny	Indiana U.	sweeny@indiana.edu
Dan Taylor	Internet2	dbt3@internet2.edu
George Uhl	NASA/GSFC	george.d.uhl@nasa.gov
Alan Verlo	UIC	darkman@evl.uic.edu
Alan Welday	iCloud	awelday@icloud.com
Jim Williams	TransPac	williams@indiana.edu

Action Items

1. Grant Miller will contact Sara Mosely to identify a contact with the DHS TIC design Department.
2. JET will arrange a discussion of the 100G trans-Atlantic connectivity at its June meeting.
3. Eli Dart will schedule a Big Data Testbed teleconference to discuss what network resources are needed to support the Big Data demonstrations at SC13, including inter-booth 100G networking at the conference.
4. Grant Miller will include the potential SDN workshop on future JET agendas.

Proceedings

This meeting of the JET was chaired by Vince Dattoria of DOE/SC. DHS representatives, led by Sara Mosely, Department Director for Trusted Internet Connections (TICs) gave a presentation on the current implementation and status of the Trusted Internet Connections

Trusted Internet Connections (TICs): Sara Mosely, Sean Connelly

TICs are now administered by the Federal Network Resilience (FNR) Department of DHS. FNR works with Federal civilian agencies to enhance Cybersecurity by:

- Identification of common requirements across the Federal government
- Interagency collaboration to identify and enable common solutions
- Agency implementation of policy and technical solutions
- Monitoring technical solutions
- Oversight and reporting on the Comprehensive National Cybersecurity Initiative (CNCI) TIC Program
- Development of reference architectures

The goals of the TIC program are to reduce the number of internet connections and use TICs to connect to external networks. The TIC 2.0 architecture specifies TIC capabilities for Trusted Internet Connection Access Points (TICAPs) and Managed Trusted Internet protocol Service (MTIPS). The architecture uses Einstein boxes to monitor traffic to/from external networks. (Note: The architecture and the complete presentation may be found on the JET Wiki under the JET May 2013 Meeting:

http://www.nitrd.gov/nitrdgroups/index.php?title=JET_Meetings_2013

MTIPS services include:

- TIC portals for access to the Internet
- Security services including Einstein boxes
- MTIPS transport from NetworX provider to TIC
- Local access line from the agency to the NetworX provider
- Service enabling device (router/firewall) at the agency

There are currently shared TIC access points operated by the Department of State and the Department of the Interior.

For further information and to contact DHS please send email to: tic@hq.dhs.gov

Discussion identified that:

- There is a TIC design Department that JET should also coordinate with

- DHS concentrates on production traffic. Science networks are currently excluded and are not monitored
- Multiple flows at 10G may be a problem for processing by the Einstein boxes
- The science DMZ is an excellent deployment for segregating big data science flows
- There is an IPv6 port on Einstein but DHS needs pre-notice to enable it if you are going to use IPv6

AI: Grant Miller will contact Sara Mosely to identify a contact with the DHS TIC design Department.

Roundtable

ACE: Dale Finkelson

ACE experienced a cable cut about 104 km west of England. ACE retains 20G capacity and it will increase to 30G when the cut is repaired. The Chicago to Amsterdam link is also affected by this cable cut.

Jim Williams is interested in supporting the trial 100G trans-Atlantic optical connections that are being deployed. He wants to identify how researchers will use this bandwidth.

The 100G trans-Atlantic connection is scheduled to be deployed between MAN LAN and TERENA on June 6.

AI: JET will arrange a discussion of the 100G trans-Atlantic connectivity at its June meeting.

ESnet: Pat Dorn

ESnet is implementing changes in its Chicago architecture. They consolidated routers at the StarLight and 600 West Chicago facilities. All 10G routers have moved onto ALUs. ESnet is Software Defined Networking (SDN) enabled. The ESnet 100G testbed Chicago point has moved to StarLight. ESnet is preparing for the 100G trans-Atlantic link. ESnet implemented an additional cross-connect to the MAN LAN switch. ESnet also made improvements to its ESnet portal.

Internet2: Chris Robb

Internet2 swapped out T1600 routers to MX960s and fixed power issues. An AL2S node was deployed in Ashburn. Co-location will be delivered over the next 6 weeks to a number of sites including Phoenix; Albany; Boston; Minneapolis; and Jackson, MS.

Internet2 is coordinating a community dialog on upgrading OESS software to implement Layer 3 service over Layer 2 fabric.

Their Seattle\leftrightarrowChicago build is completed, the 100G circuits have been handed over by Zayo and testing is under way.

NIH: Don Preuss

NIH is working on 100G connectivity. They are ordering equipment and planning on completion in the summer, followed by testing. They are planning on using

this capacity for demonstrations at SC13. NIH is hitting the 20G limit on its current capacity.

TransPac: Brent Sweeny

TransPac supported a trans-Pacific demonstration that went well.

A-Wave: Don Riley

No changes.

African networking: Don Riley

A lot is happening in African connectivity and network use – much related to the EU Africa Connect project. The Ubuntu Alliance Website (<http://www.ubuntunet.net/>) provides information on current capabilities.

Alaska: Shawn Armstrong

No changes to report

StarLight: Alan Verlo

StarLight is working with Ciena on demonstrations for a technical showcase in Ottawa, Canada. They are working with ESnet to support a TERENA conference. StarLight has received 100G line cards. They continue to work with GENI and LHCONE. The 100G network will be used for a showcase Canada demonstration. StarLight will support TERENA, Maastricht demonstrations in early June. They are working with Don Preuss on NIH demonstrations at 100G. They are also working with US Ignite in the run-up to their conference in Chicago in June.

MAN LAN/WIX: Dale Finkelson

They have implemented some new links for LHC. They are working on demonstrations for TERENA. Moving LHC to AL2S.

Big Data Testbed: Eli Dart

Joe Mambretti, Tom Lehman, and Eli Dart met at the Internet2 Member's Meeting to discuss implementing the Big Data Testbed Sloan Digital Sky Survey demonstration at SC13.

Don Preuss is working on a 100G NIH link to support a Bioinformatics demonstration at SC13.

NASA Goddard is considering a demonstration using NASA data.

Linden Mercer is working on a potential demonstration of remote I/O access instead of bulk data transfer using UDP

Martin Swany, in coordination with Eli Dart, is considering a demonstration of Phoebus accelerator capabilities for supporting big data transfers

AI: Eli Dart will schedule a Big Data Testbed teleconference to discuss what network resources are needed to support the Big Data demonstrations at SC13, including inter-booth 100G networking at the conference.

Martin Swany reported that information on pricing for SCinet links is expected to be available next week.

Prototype 100G dynamic, Layer 1, 2, 3 SDN Optical Network: Grant Miller

Several agencies expressed an interest in leveraging existing SDN testbeds and domains to demonstrate a national/international scale operational networking capability of Layer 1, 2, 3 inter-domain dynamic optical 100G SDN networking. The White House is very supportive of this objective and will promote the idea of a workshop that will:

- Identify needs and requirements for developing and operating the prototype network
- Include representatives of Federal agencies, research community, commercial providers and users, and laboratories
- Develop recommendations for steps to proceed with the prototype network
- Identify potential responsibilities of the federal agencies
- Identify timing of the network deployment
- Provide a report to OSTP and the NITRD Subcommittee on the workshop findings
- Coordinate under the LSN and JET NITRD structure.

Discussion identified that there are currently several efforts and several constituencies interested in deploying operational SDN over dynamic optical networks. We should coordinate and cooperate with these constituencies by making sure they are represented in the workshop. International organizations should be included to demonstrate an international capability including Netherlands, Japan, and StarLight. A coordinated LSN and JET effort is needed to promote progress on deploying an operational network and to promote rapid technology transfer to the commercial sector. The workshop should be held in the winter 2012-2013. Kristin Rechtenbaugh of the GENI Project indicated that the GENI testbeds are very interested in this capability and plan to coordinate with this effort.

AI: Grant Miller will include the potential SDN workshop on future JET agendas.

Meetings of Interest:

June 3-5	NANOG, New Orleans, LA
June 3-6	TNC, Maastricht, Holland
June 6-7	Global Integrated Lambda Facility (GLIF) Technical Workshop Maastricht Netherlands
June 24-26	US Ignite Application Summit, Chicago
July 15-16	ESCC, Berkeley, CA
July 17-18	Focused Technical Meeting, Network Issues in Life Sciences Research LBL; See: http://events.internet2.edu/2013/ftw-life-sciences/
July 21-23	GEC17, Madison, WI
August 19-23	APAN, Daejong, Korea
September 9-13	CANS, Chengdu, China
October 1-2	Global LambdaGrid annual workshop, Singapore
October 7-9	NANOG, Phoenix, AZ

November 17-22 SC13, Denver, CO

Next JET Meetings:

June 18: 11:00-2:00, NSF, Room II-515

July 16: 5:45-7:45PM (PDT), LBNL, Berkeley, CA