

## **JET Meeting Minutes**

November 17, 2010 at SC10, New Orleans

### **I. Participants**

Guy Almes	TAMU
John Baird	DREN
Joe Burrescia	ESnet
Rich Carlson	DOE
Steve Cotter	ESnet
Vince Dattoria	DOE/SC
David Farmer	UMN
Bill Fink	NASA/GSFC
Dave Hartzell	NASA
Susan Hicks	ORNL
Bill Jensen	BOREASnet
Richard Jimmerson	ARIN
Paul Love	NCO
Joe Mambretti	Northwestern U./StarLight
Kevin McGrattin	Cisco
Joe Metzger	ESnet
Grant Miller	NCO
Mark Mutz	NOAA
Dave Pokorney	FLR
Chris Robb	Internet2
Brent Sweeney	GRNOC/Indiana U
Kevin Thompson	NSF
Brian Tierney	ESnet
Alan Verlo	UIC/StarLight
Matt Zekauskas	Internet2

### **Action Items**

1. ARIN will post a statement on their WIKI about the Federal statement that all equipment must support IPv6.
2. DREN will keep the JET informed when its knowledge base on IPv6 deployment is publicly available.
3. Brent Sweeney will send the JET information on the Dec 5-7 US/India meeting on cooperation for applications over networks
4. Jet members should make sure their contact information is up to date with ARIN.
5. Please identify your perfSONAR hosts and what measurements they are taking and send this information to Joe Metzger at: Metzger@es.net

### **Proceedings**

This meeting of the JET was coordinated by Vince Dattoria of DOE and Paul Love of the NCO.

ESnet received responses from NASA and the University of Utah that they would like to participate in perfSONAR testing.

## **Roundtable**

### **DREN:**

The DREN3 procurement is proceeding.

There were 11 unallocated IPv4 /8s since Afric received another /8. It is expected that IPv4 address space will be depleted in the late 2010 or early 2011 time frame.

A July 1 change to the FARR requires that purchasers of IT equipment need to ask suppliers for a declaration of conformity to NIST standards.

There was a September 28 Federal statement that all equipment must support IPv6.

AI: ARIN will post a statement on their WIKI about the Federal statement that all equipment must support IPv6.

DREN maintains a knowledge base on IPv6 deployment. It has been under a security wall but in January it is expected to be publicly available.

AI: DREN will keep the JET informed when its knowledge base on IPv6 deployment is publicly available.

### **ESnet**

ESnet is carrying out a dark fiber build on Long Island with completion scheduled for early December. ANI testbed equipment is being shipped to New York this week. A new GLORIAD installation in Seattle reduces transit time by 20%. ESnet is deploying perfSONAR at all sib 10 G sites.

ESnet has responses back from its ARRA RFP. They will be evaluating them. The first round of applications proposals were received October 6 (there were 6 proposals received).

### **Internet2**

Internet2 has been focused on SC10 demonstrations. They are supporting a 100 G demonstration with NASA in the SC10 space.

Internet2 added a second 10 G at Kansas City. They added new staff at the NOC; Tom Knoler will be based in Ann Arbor. Chris Spears was hired and is based in Washington, DC. The GPN is migrating from Chicago to Kansas City.

Internet2 is migrating MANLAN equipment to Core Director and moving it to Chicago. This move may cause some disruption.

### **NISN:**

Nothing to report

### **NLR**

Nothing to report

**NOAA: Mark Mutz**

NOAA is implementing its new Nwave network. A 10 G wave has been completed to Denver. The GRNOC is running iPerf. The first connections to GFDL and Oak Ridge are running. They are making plans to connect to NESDIS shortly. NOAA is holding a demonstration at SC10.

**NREN: Dave Hartzell**

NREN has been focused on supporting demonstrations at SC10. They are holding 40 G and 100 G demonstrations at the NASA booth with connectivity to several wide area networks. They are demonstrating long-reach QSFP at 40 G using beta software. They are demonstrating 100 G between NOAA and NASA.

The NREN WAN has been stable with no changes

**TransPac and ACE: Brent Sweeney**

The TransPac contract is not quite completed. Circuits are expected to be in-place by mid January for TransPac3. The ACE RFP solicitation is expected out by December 1. They do not expect to have 100 G transoceanic. Vendors are not offering this service yet and it is expected that it would initially be very expensive. NICT has a perfSONAR demonstration in its SC10 booth providing a WorldView of network performance.

**C-Wave**

C-Wave is carrying traffic from Brazil to CalTech. A RENSI connection is operational to support GENI.

**FLR**

FLR has enabled graphics for C-wave. It has 20 VLANs from LA to Chicago in support of GLIF. The number of FLR participants is increasing. FLR is interested in IPv6.

**Northern Tier**

Northern Tier has been lit for a while. It is part of UCAN and provides increased bandwidth between Chicago and Seattle. A Golden Spike ceremony was held in June in Missoula. North and South Dakota received an award to connect South Dakota waves to Fargo to establish a North-south link. In the East a Merit BTOP award connects Minnesota. Duluth and Superior will be well-connected. They are investigating if they can provide connectivity to Canada.

**US UCAN**

US UCAN presented an initial map of its footprint at the last JET meeting. They will implement a full fiber footprint. They are evaluating the optical vendor responses to their RFP. A vendor will be announced in the December time frame. They are targeting mid 2011 coast-to-coast full operations. They expect fiber deployment in December.

UCAN has \$62 Million for deploying the fiber backbone. Money is not allocated for operations and maintenance. Utah and MCNC held a meeting to discuss operations. UCAN will connect 200,000 sites in 50 states.

## **NGIX Roundtable**

### **StarLight: Alan Verlo**

StarLight recently supported the GDC9 (GENI) meetings recently. It will support GDC10 in March 2011. StarLight participated in the GLIF dynamic circuits demonstrations in Geneva recently. StarLight is supporting SC10 demonstrations including a Ciena 100 G demo. They supported a 100 G demonstration from StarLight to Ottawa before SC10.

StarLight supported an international demonstration of Fineas, a control framework management plane. In support of GENI StarLight supported demonstrations of dynamic provisioning among the U.S., Brazil and Taiwan. At SC10 StarLight is supporting NASA Goddard Space Flight Center, NASA Ames, and NOAA. Data Center communications will be using 40 Gbps. Hashing small data flows over 10 Gbps into 40 Gbps is a significant issue to be addressed.

AI: Brent Sweeney will send the JET information on the Dec 5-7 US/India meeting on cooperation for applications over networks

### **Ames Exchange**

There are plans to upgrade the AIX but those plans are currently on hold.

### **Missile Defense Agency (MDA) Fiber**

MDA has a 32,000 Km CONUS fiber ring that is being surplused. There are 17 years remaining on its IRU.

AI: Vince Dattoria will send the JET information on how to contact the MDA on use of its surplused fiber.

### **IPv4 Status and IPv6 deployment: Richard Jimmerson**

There are 11 /8s left in the unallocated IPv4 pool. The African network Information Center was just allocated a /8. When 5 /8s remain the address space pool will be declared closed. The IANA free pool is expected to be depleted in December 2010. Organizations deploying IPv6 need a small amount of IPv4 space for DNS and IANA reserves IPv4 space to enable that.

Once the ARIN free pool of v4 space is depleted, current holders of v4 space can return address space to ARIN for redeployment.

V6 address space is ramping up quickly as equipment vendors and software manufacturers prepare for its increased usage. Organizations are increasingly discussing their v6 status and infrastructure.

There is a December 31, 2010 deadline for signing the ARIN legacy agreement. Dave Farmer is organizing a BOF at the Clemson University Joint Techs Meeting to discuss the ARIN legacy agreement.

Community discussions are taking place on registration requirements, best practices, and auditing of v6 resource usage.

AI: Jet members should make sure their contact information is up to date with ARIN.

**perfSONAR: Matt Zekauskas**

The previous perfSONAR workshop organizers have received written text from session chairs of the workshop. The document will be edited and issued to the workshop committee at large. There was good feedback from workshop attendees last year. Eric Boyd is considering a follow-on workshop for perfSONAR for the current year.

Joe Metzger recommended for the JET a perfSONAR focus on IPv6. Pieces are working but technical issues and deployment issues need to be addressed. Deployers need to coordinate to develop plans for taking measurements (what measurements, when, where). We need to identify what APAN nations are doing with perfSONAR. We need to identify their perfSONAR hosts and the measurements they are taking.

AI: Please identify your perfSONAR hosts and what measurements they are taking and send this information to Joe Metzger at: Metzger@es.net

**Meetings of interest:**

December 5-7, New Delhi US/India Cooperation meeting  
January 30-February 3 2011 ESCC/Internet2 Techs Workshop, Clemson, SC  
February 3-4 2011 ESCC, Clemson, SC  
February 3-4 2011 Network Performance Workshop, Clemson, SC  
February 3-5 2011 IPv6 Workshop, Clemson, SC  
March 14-15 GEC meeting in Puerto Rico  
July 10-13 2011 ESCC/Internet2 Techs Workshop, Fairbanks, AK  
July 13-14 2011 ESCC, Fairbanks, AK  
January-February 2013 Techs in Paradise

**Meetings of the JET in January and February 2011**

With the Winter ESCC/Internet2 Techs Workshop slated for the 1<sup>st</sup> week of February, it was agreed to collapse the JET's January and February meetings into a single meeting held in Clemson, SC, during Jt Techs.

**Next JET Meetings**

December 21, 11:00-2:00, NSF only if there is an explicit need  
February 1, 2011, 7:45-10:15PM (EST), The Conference Center and Inn at Clemson University, Clemson, SC. (*nb* this is during the Winter Jt Techs)