JET Meeting Minutes
March 17, 2009

I. Participants

Guy Almes	TAMU	galmes@tamu.edu
Rich Carlson	Internet2	rcarlson@internet2.edu
Bobby Cates	NASA/Ames	bcates@mail.arc.nasa.gov
Andy Germain	NASA/Goddard	andy.germain@gsfc.nasa.gov
Mike Gill	NIH	gill@nlm.nih.gov
Chin Guok	ESnet	chin@es.net
Dave Hartzel	NASA/Ames	david.hartzell@nasa.gov
Wendy Huntoon	NLR	huntoon@psc.edu
Julio Ibara	FIU	Julio@fiu.edu
JJ Jamison	Cisco	jojamiso@cisco.com
Kevin Kranacs	NASA	kevin.m.kranacs@nasa.gov
Paul Love	NCO	epl@sover.net
Joe Mambretti	Northwestern Un.	j-mambretti@northwestern.edu
Kevin McGrattan	Cisco	kmcgratt@cisco.com
Grant Miller	NCO	miller@nitrd.gov
Peter O'Neill	MAX	poneil@maxgigapop.net
Chris Robb	Internet2	chrobb@internet2.edu
Brent Sweeney	Indiana Un/GRNOC	sweeney@indiana.edu
Kevin Thompson	DHS	kevin.thompson@dhs.gov
Christian Todorov	Internet2	ctodorov@internet2.edu
Alan Verlo	StarLight	darkman@evl.uic.edu
Alan Welday	DREN	awelday@hpcmo.hpc.mil
Matt Zekauskas	Internet2	matt@internet2.edu

Action Items
1. Rich Carlson will distribute definitions and descriptions of the PerfSONAR spreadsheet tools and capabilities to the JET members

2. Grant Miller will poll the JETnets on their ability to participate in a one-day workshop to develop implementation plans for performance measurement data sharing.

3. Phil Dykstra will work to provide DREN information for the PerfSONAR information sharing spreadsheet.

Proceedings

This meeting of the JET was chaired by Paul Love of the NCO.

Network and Exchange Point Roundtable

AmPath

AmPath is implementing a new IRNC 10 G circuit between Miami and Sao Paulo

to connect Red Clara and RNP. AmPath is implementing a 2nd 10 G circuit from RNP to Miami in June. The Miami infrastructure is being upgraded to accommodate these new links. AmPath is working with Atlantic Wave and C-Wave to connect to these new 10 G links.

The Trinidad to Miami STM1 circuit is operational. AmPath is discussing peering between Internet2 and the University of the West Indies.

C-Wave

C-Wave supported an NTC experiment involving Japan, Europe, and the U.S. They used VLAN mapping to provide cross-domain services over a long path and a short path. Traffic engineering was enabled on C-Wave to test its capabilities.

C-Wave added connections to CineGrid in San Diego. They are working on Ampath and CUDI connections. The circuits are in-place in CENI and Florida LambdaRail. CUDI is deploying an additional circuit to CERN going through StarLight. AmPath is talking to Red Clara about enabling collaborations such as with the astronomy community.

DREN

DREN is upgrading its equipment throughout the DREN sites. Chassis and memory upgrades are being made at about half the DREN sites. A cut in GCI service to Alaska affected the DREN connectivity. GCI found an alternative path to Alaska until the cut is fixed. NASA is experiencing better performance (throughput) on this alternative infrastructure. DREN is discussing an upgrade to OC48. NASA expressed an interest in upgrading its use of the DREN fabric to 150 Mbps in approximately 2-3 years.

ESnet

ESnet completed its upgrade in the San Francisco Bay area. It is upgrading the LHC sites at FermiLab, ANL and BNL.\

Internet2Net

Internet2Net indicated they had nothing new to report.

NIH

The NIH 10 G link is operating smoothly. They have seen an increase in traffic, particularly inbound traffic to capture genomic data.

National LambdaRail (NLR)

The NLR upgrade will be completed at the end of March. The last route for upgrade, Chicago to Washington will be completed next week. NLR is cleaning up the infrastructure to discard the 15808s. Reliability so far has been exceptionally good.

NLR is implementing a telepresence capability. The Kansas City exchange is configured with standard dialing to support telepresence in the NLR backbone. NLR has received cross-backbone requests for telepresence sessions and some international requests from NRENs.

MPath and NDT servers on NLR may be used for testing on the NLR backbone. NLR entertains special requests for support for performance measurement.

NREN

The NRTEN network is stable and connecting to the NASA Science Institute.

TransPac

An APAN meeting was held in Taiwan. They coordinated on an expansion of PerfSONAR deployment and use in Asia. The Japanese, Chinese and Thailand networks are expanding their deployment.

Ames Research Center

A new metro fiber ring is being implemented. Ames is supporting NASA's implementation of the TIC requirements. Ames is working with CENIC and the University of Arizona to implement NASA Mars and Lunar programs at the University of Arizona and Arizona State University.

MANLAN

MANLAN reported nothing new.

NGIX-East

The MAX fiber extension will be extended to Equinix under the Phase 3 buildout.

StarLight

StarLight supported the AAAS conference in Chicago by providing a 1 GE to support demonstrations at the conference hotel. This was provided with NSF support. StarLight will provide a 1 GE link to support the Health Information Management Conference in about a month.

StarLight is supporting demonstrations with NTT with significant latency.

StarLight is working to make its high performance digital network (with Joe Mambretti) a persistent Layer 1 and 2 service using StarLight.

Meetings of Interest

April, first week. GENIE meeting at Florida International University: see the GENIE Website
End of March to April 2: DREN is holding a TAP meeting in Arizona
March 17-18: Berlin: DICS meeting
March 24 in San Diego: NLR all hands meeting
April 12-14 in Atlanta: Internet2 security specialists meeting
April 27-30 in Arlington, VA: Internet2 Members Meeting
June: San Diego: DOE and DREN are holding a conference

Sherpa

Wendy Huntoon provided a briefing on the NLR Sherpa capability. Sherpa is a dynamic provisioning tool, a fast user interface for provisioning a network service. There are two user interfaces, a Web interface and an API interface. They enable the user to login, receive authentication and authorization to add VLANs, edit/review existing VLANs, review the history of the VLANs, and reserve VLAN IDs. The user is enabled

to provision network links with a minimum 100 Mbps up to approximately 10 Gbps. The user specifies link endpoints (there can be multiple endpoints). Sherpa allows you to specify paths if you wish. Final approval for the service results in immediate provisioning of the service.

The Sherpa business model is based on an equivalent cost to the NLR Framenet service. The dynamic service cost is based on the number of Framenet segments and length of time. A pricing unit is Gbps per Layer 2 segment per hour.

Sherpa is upgrading its scheduling and improving its API.

The Sherpa service is available across the entire NLR footprint.

If you wish to investigate this service, test accounts are available. Contact: **ess@nlr.net**

NLR is looking at interoperability with OSCARS; DRAGON and international dynamic services. Comments indicated that NLR should work with GLIF and the OGF for international optical interoperability.

OSCARS

Chin Guok described the OSCARS capability, the DOE dynamic circuit capability. OSCARS provides a path computation and scheduling services through Web and API interfaces. It is a geographically scalable service and provides security within the ESnet infrastructure. Traffic isolation is provided to each stream so traffic on OSCARS does not interfere with other users. OSCARS has had 3500 reservations of short-term dynamic VCs. It uses the SDN services of ESnet. The OSCARS control plane was developed in coordination with DICE (Dante, Internet2, CalTech, and ESnet). OSCARS is considering extending its services to Layer 1. OSCARS is addressing issues including:

- How do you extend framing across domains
- How do we obtain dynamic topology information
- Defining standard interface models
- Collaborating with GLIF and OGF

DCN

Christian Todorov described the Internet2 DCN service that will be in production in mid July 2009. It is currently in a lightweight pilot program configuration. DCN policy for use of the DCN mirrors Internet2 policy. The size of a site's DCN and layer 3 connections are not coupled. It will enable transit between international networks, and between domestic peers; but transit between domestic peers and international peers will be disabled. Exceptions can be requested. Authorization for use of services will be provided by X.509 certificates. Accounting data (under the pilot program) will be made openly available non-anonymized. A fee structure for the DCN is being developed. The Internet2 NTAC is considering a flat-fee model (initial target is $85K/connector/year) with no charges being billed until 2010. The DCN NOC will be at Indiana University

Performance Measurement Project

Rich Carlson described the performance measurement project. A JET team, coordinated by Rich Carlson, developed a white paper proposing implementation of performance measurement across science network domains based on PerfSONAR tools

and services. The team developed a spreadsheet of PerfSONAR tools and capabilities which was issued to the JET science networks. The science networks were asked to describe their ability and willingness to:

- Share information with a remote domain
- Provide some information with some domains
- Use remote domain data
- Provide a private resource only.

The spreadsheet was distributed to the JET science networks and several networks responded with their inputs. Discussion among the JET participants identified that:

- A better description of the services and the sharing arrangements is needed to enable the networks to provide the requested information

AI: Rich Carlson will distribute definitions and descriptions of the PerfSONAR spreadsheet tools and capabilities to the JET members

- A workshop should be convened in the May/June time frame to develop a plan to implement the sharing of information among the JET science networks

AI: Grant Miller will poll the JETnets on their ability to participate in a one-day workshop to develop implementation plans for performance measurement data. Sharing.

AI: Phil Dykstra will work to provide DREN information for the PerfSONAR information sharing spreadsheet.

TIC Update

Bobby Cates described the current status of TIC implementation. DOJ and DOC are implementing TIC facilities. Mike Smith is acting director of the Federal Networking Security Group. Technical lead is Shawn Donovan. Vendors are announcing TICAP compliant services including AT&T and Qwest. An announcement by Verizon is expected soon.

If there are several TIC nodes in a region you can have a VLAN TIC but you have to demonstrate security over this infrastructure.

Physical restrictions for TICS conform to FIPS 199 and AL153.

Currently there are no multi-agency TICs.

Video Conferencing Capabilities

DREN uses the ViPr multicast system of Aastra. It is a desktop H.264 standard system. It provides authentication. It can establish a private session where all users are authenticated. The current ViPr uses multicast for 3-party calls or greater (it use unicast for 2-party calls) however the new software (Version 3.0 which has FCS'd) allows multiple unicast also. One DREN group has successfully tunneled multicast through commercial ISPs (Verizon, Comcast, etc.) and connected to other networks via unicast on 2-party calls.

Cisco supports WebX. Using it you can share browsers, interactive sessions, and video windows. It has a bridge. There are demonstration packages you can use to try out

the capability. Telepresence units are housed in about 300 sites, including 50 university sites but you have to go to those facilities.

The Polycomm video conferencing is easy to use with desktop units.

Larry Amiot at Argonne NL (**amiot@anl.gov**) is a good resource for information on video conferencing capabilities.

Future JET Meetings

April 21, 2009, 11:00-2:00 at the NSF, Room 1160
May 1, 2009, 11:00-2:00 at the NSF, Room 1150