JET Meeting Minutes
February 7, 2006

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Action Items

1. Networks seeking to use Abilene transit to peer should contact Ana Preston: apreston@internet2.edu

2. Brent Sweeny will provide additional information on BGP with IPv6 to the JET.

3. Anyone interested in peering with NLR should contact Brent Sweeney at: sweeny@indiana.edu

4. If you are interested in connecting to HOPI, please contact Rick Summerhill.

5. Dan Hitchcock will send his slides on LHC requirements to the JET

Proceedings
This meeting of the JET was chaired by Paul Love of Internet2 and George Seweryniak of DOE/SC.

Action Item Review
A review of the action items identified that January's action items will be completed by this evening or are ongoing. The ongoing action items include:

o JET members should coordinate on defining Level 1, 2, and 3 connectivity and service definitions.
o Jerry Sobieski will circulate to the JET his document defining Packet LSP, Ethernet, and SONET SPH services
o JET members should start making plans to attend the ONT3 workshop, Sept 14-15 in Tokyo.
o NISN will inform JET members of the results of their asking vendors to identify the ability of their equipments to look at IPv6 packets.
o The JET should have a regular agenda item to discuss open exchanges and the status of cross connections.

Transit: AARnet/UofHawaii/Fednets/Abilene
Mark Prior, Heather Boyles, and Ana Preston led a discussion of transit among the high performance research networks. Changes to the Abilene transit agreement allow transit between peers, case by case, when requested by both peers. However, not all peers come to an international exchange point. Networks seeking to peer should contact Ana Preston of Internet2 who will work with the NOC to implement the peering. There are new requirements driven by security needs, primarily identifying where the networks will enter the Abilene domain.

AI: Networks seeking to use Abilene transit to peer should contact Ana Preston: apreston@internet2.edu

Vendor Support of IPv6 Measurement
Brent Sweeny discussed IPv6 measurement capabilities. Two types of problems are encountered; SNMP implementation is difficult and, more importantly, it is important to identify when BGP has changed. Abilene has requested this capability from Juniper.

AI: Brent Sweeny will provide additional information on BGP with IPv6 to the JET.

Discussion identified that interface counters are a problem for all v4 and v6 routers. Octet counters, firewall filter counters, and netflow have been suggested as solutions.

JET Roundtable

Abilene
Abilene has been focused primarily on security. They have been holding various exercises to ensure security. Abilene has implemented additional v6 commodity peering on the west coast and is looking at additional commodity v6 peering on East coast.

NISN
NISN is implementing a new GSFC connection. They are looking at new backup circuits for Stennis due to the outages experienced during Hurricane Katrina. NISN faces cuts in the FY 2007 budget that are expected to affect a couple of OC48's. NISN is planning multicast augmentation.

ESnet
ESnet is still implementing the Chicago NAP. They are implementing a new DC router for access to GEANT. The Albuquerque-El Paso link has been upgraded to OC48. ESnet is continuing its OSCARS collaboration.

NISN
NISN is talking to Level3 about increasing West coast peering. They are waiting for E&I. Operational testing is expected in June followed closely by operational capability.
NISN is planning to peer with SoX and hoping to peer with Pacific Wave when they get to NGIX-West.

NREN

NREN is working to enable an Ames-to-Goddard link. The remaining Qwest services will be disconnected by March 15, includes several prominent sites.

NLR

The NLR optical network is complete as of today. They are prepared to enable 20G on the backbone. They are reviewing a proposal to add optical switching, to a) "use it as an optical patch panel", b) switch around failures, and secondarily c) use it for other research projects.

AI: Anyone interested in peering with NLR should contact Brent Sweeney at: sweeny@indiana.edu

NLR plans to have optical switches jointly controlled with the RONs to avoid the need for back-to-back optical switches.

UltraScienceNet

UltraScienceNet (USN) provided a map of its system. They have implemented technology for testing. The SC05 demonstration moved over 160TB during peak, close to 90% of its theoretical capacity. They experienced instability on one of the switches.

USN is holding discussions with HOPI on how to cooperate, e.g. making spaces available for HOPI to implement blades. Ciena is talking about donating a switch in Washington, DC and in NY, which would greatly facilitate moving Linear Hadron Collider (LHC) data.   New York City and Chicago are their main sites and they are very interested in tying them together. HOPI will help move data to LHC, tier2 sites. For a map of the USN please see: www.usn.ornl.gov

Discussion identified that LHC will not be in production until 2008. Lots of testing will be done between now and then. HOPI does matches a few of the LHC sites but they are beginning to plan for LHC, tier 2 support.

StarLight

StarLight moved their NDT server so it is now available.

Ames

Ames Research Center (ARC) has installed its Force10 switch. Connections will be migrated to the switch, e.g. ESnet. ARC is looking at getting a dark fiber pair from Kuiper. This requires approval at Ames. A fiber pair to Equinox is pending a new carrier agreement to implement a connection to 200 Paul in SF...

Pacific Wave

Pacific Wave (PW) supports connecting at multiple locations. A PAX facility in Sunnyvale has power issues but should be available soon. PW is standardizing a VLAN service. PW does not currently IPv6 multicast but is planning to. It might depend

on the Cisco solution next year.   There are no plans for a measurement infrastructure but there is the recognition that PW needs one.

MAN LAN
        MAN LAN is working on measurement.

Upcoming Meeting of Interest
Internet2 IPv6 workshop in NC next month
May 22 NISN customer forum in San Antonio

USN|HOPI Collaborative Applications Update - Rick Summerhill & Bill Wing
        USN and HOPI are working on connectivity between the two testbeds.
The HOPI first phase of completely deployed, OC192 will be complete next week. They are working on phase 2. The HOPI NOC is the testbed support center. For the next year they are focusing on interfaces with other networks, the control plane, connections, and applications evolving to production services. Over the next year they will be planning the southern route.

AI: If you are interested in connecting to HOPI, please contact Rick Summerhill.

HOPI has an OC192 connection to GEANT Alcatel switch that can do GE's. Starting in April it will be capable of supporting 10 GE. In New York City HOPI goes into the MAN LAN HDXC

LHC Requirements - Dan Hitchcock
        The U.S. has $0.5-1.0 billion invested in the LHC support. The goal is for any tier1 site to get to any tier2 site anywhere in the world, transparently. Success of the experiment relies on being able to get the data to all the centers all the time". The plan is for a total of 1% downtime, from all causes. The huge data rate requirements mean buffering capability is limited. Workshops are being held to plan and prepare for these requirements. These requirements are considered lower bounds on the actual data rates that might be experienced. Tier2 sites expected to have 100s of TB of data, 3-4 gigabytes per second all the time, with the same amount going out to other universities.

For a map of the LHC collaboration sites, RONs and NLR, please see:
http://www.internet2.edu/presentations/jt2006feb/20060206-standardlight-wallace.pdf

AI: Dan Hitchcock will send his slides on LHC requirements to the JET

Discussion identified that:
- Internet2/ESnet/LHC workshops are providing the information to plan properly
- Requirements and implementation information must get to the campuses
- Colocation sites might allow a site to go down and still meet requirements
- Everything is archived before forwarding, but buffering at CERN is limited.

EDDY Briefing - Mark Poepping
EDDY provides "orchestration of telemetry data"; correlation is a central concept of EDDY. It arose out of the NSF Middleware Initiative. It can coordinate 1 event at 12,000 sources, or 12,000 events at one source. It provides 75 percent of its effort figuring out the bottlenecks and inconsistencies and 25 percent of its effort solving the problem. It deals with issues of:
- Spotty data
- E2E accountability
- Scale
- Normalization across domains
- Transformation to comparable bases

EDDY is currently used at Carnegie Mellon for a climate control model. The program is doing lots of outreach. It is funded primarily by the NSF middleware initiative. Other NSF grants and commercial partners are being sought.

Purchase of Fiber
JETnets can buy fiber from FiberCo. Internet2 members, NLR members, and ORNL are doing this. ORNL is negotiating a contract extension for after March, but fiber will be more expensive.

Next JET Meetings
March 21, 11:00-2:00, NSF, Room 1150
April 18, 11AM-2PM, NSF Rm 1150, NSF
May 16, 11AM-2PM, NSF Rm 1150, NSF