JET Meeting Minutes
January 31, 2011 at Jt Techs, Clemson, SC

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Action Items

1. Joe Metzger and Paul Love will solicit JETNets input on v6 perfSONAR deployment.
2. Ron Broersma will send his DNSSec/DREN briefing to the JET members
3. The JET will revisit the topic of IPv6 deployment at its April or May meeting.

Proceedings

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

Network Roundtable

Atlantic Wave: Ernie Rubi

Atlantic Wave provided connectivity between RedClara and NORDUnet. AmPath is using AWave for connectivity to Canarie.

DREN: Ron Broersma

DREN recently held a Hawaii Internet Consortium (HIC) meeting to coordinate user requirements among the HIC organizations. DREN issued an RFP in January for providing the next generation DREN networking providing a 100G backbone. The RFP indicates it will be an IPv6 network backwardly compatible to legacy IPv4. All network management will be via IPv6.

Related talks at the ESCC/Internet2 Techs workshop:

events.internet2.edu/2011/jt-clemson/agenda.cfm?go=session&id=10001538&event=1150

ESnet: Joe Burescia

ESnet's installation of DWDM to Brookhaven Laboratory on Long Island has been delayed by snow. The ANI testbed will use this service. ESnet installed its first 20G site at FermiLab. They recently received 8 Petabytes of data, 40% of this over the network. perfSONAR equipment only remains to be installed at some lower speed sites. ESnet is installing next generation videoconferencing. ESnet is evaluating its client plans for outsourcing services.

Related talks at the ESCC/Internet2 Techs workshop:

events.internet2.edu/2011/jt-clemson/agenda.cfm?go=session&id=10001525&event=1150

Internet2: Dale Finkelson

Internet2 is developing its schedule for Internet2 upgrades based on BTOP timing. Phase 1 deployment is planned for completion in June 2011 and will provide a mid-continent coast-to-coast footprint at 100G. Internet2 is buying 20 year Level3 IRUs for fiber. Phase 2 will take place July 2011-July 2012. Internet2 is subcontracting to Northern Tier for upgrades to Northern Tier to provide 100G service to Internet2. Phase 3 will be completed in July 2013.

Internet2 issued an RFP for its network service. A review team has members from the networking community, IU staff and Internet2 members. Infinera will provide the upgrade on the Northern Tier segment. Contracts have been signed with Ciena to provide a national footprint using its Activeflex 6500 platform. Internet2 is currently considering power requirements and co-location sites. Vendors are providing fiber loss data. The 100G network will use 10 Juniper T1600 platforms. The equipment will be staged at the Indiana University NOC where it will be tested and shipped out to installation sites. The MX960s will be pulled out and replaced by the T1600s. The first MX960 pulled out will go to Chicago.

Related talks at the ESCC/Internet2 Techs workshop:

events.internet2.edu/2011/jt-clemson/agenda.cfm?go=session&id=10001523&event=1150

NISN

No report

NLR

No report

NOAA: Mark Mutz

NOAA is implementing its new N-Wave network. The core network has been completed. The three initial RDHCPS sites are connected. Other end sites are now starting to connect. Some sites will move to the new network with layer 2 Ethernet. NOAA and NASA demonstrated a 100G application at SC2010 using Cisco 100G cards.

Related talks at the ESCC/Internet2 Techs workshop:

events.internet2.edu/2011/jt-clemson/agenda.cfm?go=session&id=10001575&event=1150

NREN:

No report

TransPAC and ACE: Brent Sweeney

TransPac will implement a new 10G link to Japan in March. TransPacific cables only offer 10G service at this time. Hibernia offers 40G waves service across the Atlantic. ACE is ready to request 3 new circuits.

Northern Tier: Dave Farmer

Northern Tier is in negotiations with Internet2 on how to provide Internet2 100G services. Other BTOP awardees connect to Northern Tier on its eastern end. Four BTOP awardees land in Duluth which will be a BTOP network center. Northern Tier will install a path from Fargo to Aberdeen as part of a path from Fargo to Kansas City to Omaha.

NGIX Roundtable

MANLAN: Dale Finkelson

MANLAN moved its full-sized core director from Chicago to New York to replace the New York Nortel equipment. The change is expected to be complete February 24-25. The new core director provides growth potential and will make it easier to implement dynamic circuit control. Dragon and OSCARS will be implemented on this core director in spring 2011. The core director will also support the use of Jumbo Frames. As part of the MANLAN upgrade perfSONAR instrumentation will be installed. Although this core director will not support 100G peering it is projected that some JETNets will peer at 100G sometime, somewhere in 2011. The MANLAN Cisco 6513 box will remain. It only has one spare interface so it also needs upgrading.

MAX: Dave Diller

The MAX is deploying 100G DWDM. The NGIX switch will be replaced with something that is 100G capable. SINET4 (Japan) is implementing a link to the MAX.

StarLight: Alan Verlo

StarLight continues to provide support for international demonstrations and connectors. It supported a CineGrid demonstration for the APAN meeting and HD stereo from Prague to Hong Kong. StarLight is working to implement vLANs with GLIF. They are preparing for the GPC10 Meeting in March.

PNWGP & Pacific Wave: Schyler Batey

CANARIE is swapping out their part of the GOLE in Seattle. Pacific Wave is deploying perfSONAR across the network. Their Western Region Network extends to Denver, Albuquerque and Los Angeles. Phoenix will be added in the near future. WRN is an extension to Pacific Wave.

Ames Exchange:

No report

US-India Workshop: Brent Sweeny

The US and India held a joint workshop in December that was sponsored by the NSF on the US side. Twenty to twenty five US technical experts, researchers, and Federal officials (NIH, NOAA, and NSF) met with 130 Indian representatives. They identified prospects for future work. A report is being developed that will be posted on Jim Williams' Web site. A follow-up meeting will be held in Washington DC in March 2012.

Workshop URL:
internationalnetworking.iu.edu/us-india-workshop

Field Code Changed

perfSONAR Workshops: Eric Boyd
DOE and NSF sponsored a June 2010 perfSONAR workshop. The workshop report was posted today on the perfSONAR Web page. Internet2 has applied for funding to hold a 2011 perfSONAR workshop to be held in late June if the funding is identified.

There is a need to identify a long-term vision for the perfSONAR workshop series. The first perfSONAR workshop focused on how we bridge the gap between research and operational networks. Now there is a need to focus on how we make perfSONAR viable over the longer-term. We need to identify a self-funding environment for the perfSONAR workshops.

perfSONAR Testbed: Joe Metzger

The JET participants have not made progress on the perfSONAR demonstration. A concept was discussed to demonstrate IPv6 perfSONAR operation during 2011.

AI: Joe Metzger and Paul Love will solicit JETNets input on v6 perfSONAR deployment.

IPv6 Deployment: Richard Jimmerson

The IPv4 address space has been depleted by IANA. ARIN IPv4 address space is expected to deplete within weeks to months. In 2010 multiple new policies were developed for reallocating IPv6 allocations. They make it easier for entities to get large blocks of address space so the entities do not have to reapply for new address space very often. Policy Order 121 is being finalized. It enables service providers to receive larger allocations of address on nibble boundaries. It also empowers rounding up and nested IPv6 allocations. Policy 6RD enables broadband providers to receive /24s for temporary allocation.

DNSSec: Ron Broersma

DREN has been deploying DNSSec and has developed a reference and pointer for DNSSec. It provides guidance for DNSSec on:

1. Fixing you network
2. Upgrading authoritative DNS servers
3. Signing your DNSSec zones
4. Publishing your records
5. Upgrading recursive servers

Specific observations include:

- Make sure your networks are DNSSec ready
- Obtain the DNSSec tools
- DNSSec responses are delivered in UDP packets of 512 bytes maximum. There are tests you can do using “Dig”
- Identify if you can receive packets > 512 Bytes
- Identify if you can receive fragmented DNSSec messages

- Firewalls, in practice, can impede DNSSec by not accepting > 512 Byte packages and not accepting fragmented DNSSec messages
- Keys include key signing keys and zone signing keys. Get them implemented

AI: Ron Broersma will send his DNSSec/DREN briefing to the JET members

Phoebus: Martin Swany

Phoebus provides network middleware for high performance networking. It is an Open Source WAN accelerator and serves as an on-ramp for ION and OSCARS. It provides strong authentication at the ends for dynamic networking for allocation and implementation across domains with very little loss across the domains. It is a layer 5 application. Phoebus can complete a connection over the commodity network if the allocation times-out. It uses XSP, Extension Session Protocol. Currently there are 12 Phoebus gateways. Phoebus provides windows support and SOX proxy support is in-development. With lossy networks Phoebus performance remains high while TCP performance lags.

Phoebus is developing an implementation for the Juniper multi-service PIC/DPC. They are optimizing Myrinet-based forwarding.

DOE IPv6 implementation

DOE has an organized taskforce to implement IPv6 transition for DOE sites, DOE labs and DOE users. They are focused on responding to the OMB mandate and the OMB 2012 deadline. They have identified that if you achieve compliance in public-facing, you have resolved many of the important issues.

DOE also has a lower-level effort being addressed by DOE coordinators meetings. They are pushing the deployment of IPv6 services. Their approach is very similar to the OMB mandate. Most DOE labs have already established IPv6 peering.

AI: The JET will revisit the topic of IPv6 deployment at its April or May meeting.

Meetings of interest:

March 7-9 2011 CENIC Meeting, Irving, CA
March 14-15 2011 GEC meeting in Puerto Rico
April 10-13 2011 ARIN, San Juan, Puerto Rico
July 10-13 2011 ESCC/Internet2 Techs Workshop, Fairbanks, AK
July 13-14 2011 ESCC, Fairbanks, AK
August 22-26 2011 APAN, New Delhi, India
August 15-18 2011 DREN Networking and Security Conference, Denver, CO
12-14 October 2011 ARIN, Philadelphia, PA
12-18 November 2011 SC11, Seattle, WA
March 2012: US-India workshop on network cooperation
January-February 2013 Techs in Paradise, Honolulu, HI

Next JET Meetings

March 15: 11:00-2:00, NSF
April 19, 11:00-2:00, NSF