

JET Meeting Minutes June 16, 2015

Participants

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Grant Miller	NCO	miller@nitrd.gov
George Uhl	NASA/GSFC	george.d.uhl@nasa.gov

Action Items

1. If you expect to need SCinet WAN circuits for SC2015 get your circuit request into SCinet before the end of the month. Contact info: WAN-team@scinet.supercomputing.org
2. Grant Miller will alert the LSN that JET is working on a community approach to implement more perfSONAR infrastructure to address soft equipment failures.
3. Paul Love and Grant Miller will invite Richard Jimmerson to address the JET on address space in the fall of 2015.
4. Grant Miller will add Nick Buraglio to the ETC forum email list
5. Grant Miller will send an email to the JET asking if others would like to join the ETC email list

Proceedings

This meeting of the JET was chaired by Vince Dattoria of DOE.

Network Roundtable

ESnet: Nick Buraglio

ESnet is interviewing for a new security person. They are reconfiguring their security procedures and processes. No architecture changes are anticipated. ESnet continues to work on a new SDN platform based on the CORSA FPGA. It is now installed, including European sites. There are no issues identified from the upgraded LHC's increased traffic.

Internet2: Grover Browning

Internet2 installed new Layer 2 nodes in Reno, and Las Vegas. A new Layer 2 node will be installed in Louisville by July 2015.

NASA networking: George Uhl

NASA is migrating the configuration of EBNet to support the new TICs. The next TIC version, 3.0, is now targeted for the end of 2016, approximately two years earlier than previously announced.

NIH/NLM: Mike Gill

Nothing new to report

Exchange Points Roundtable

Ames: Bobby Cates

Ames is implementing new PS units and generators for power. All Ames equipment is diversely supplied for power so they anticipate no disruptions of service during the migration.

Ames will be calling DHS to discuss the accelerated TIC 3.0 architecture and requirements. TIC hardware will be refreshed by the end of the calendar year. NASA is relocating their Chicago TIC, the new location is TBD. The NASA/DREN interface may be increased to 10G.

3ROX: Michael Lambert

Nothing new to report

MAN LAN & WIX: Grover Browning

Nothing new to report

StarLight: Joe Mambretti (via email)

The StarLight consortium has successfully implemented a new core switch for international (and several national) circuits, a Juniper EX 9802. The StarLight consortium supporting demonstrations at the GENI Engineering Conference (GEC 23) at UIUC, at the CVS in Ottawa, and the TERENA Networking Conference (TNC) in Porto, Portugal. The StarLight consortium is preparing to stage international SDX demonstrations for the GLIF annual meeting in Prague, Czech Republic, and multiple 100 Gbps and SDX demonstrations at SC15 in Austin Texas. The StarLight consortium has announced plans for a new international SDX, which has been funded under the National Science Foundation's International Research Network Connections (IRNC) program. Discussions about this new international exchange facility, as well as new capabilities of 100 Gbps services, are taking place this week at the TERENA Networking Conference in Porto, Portugal.

Internet2 Soft Equipment Failures: Grover Browning

Internet2 experienced soft failures in the last month surrounding Brocade fabric at MAN LAN in New York, a Juniper Layer 3 box in Chicago, and a Brocade line card in McLean. The failures occurred without logs, counters, or failure notices on the nodes in question; the only alerts being “symptoms” reported through the Internet2 perfSONAR mesh.

The Juniper failure was identified to be a software bug triggered by multicast routing that then affected a subset of all the network traffic.. A new software version was installed that resolved this issue.

The Brocade failures also did not result in logs, drop notices or other indications of failure. The drops were identified by looking at throughput. Long term, Internet2 is looking at implementing additional resiliency in the network architecture. A shift of nodes or implementing multiple nodes in a metropolitan area might resolve the issue. The architecture has to be considered carefully at each site to assure the new architecture will align with user needs. Over the shorter term, Internet2 is investigating how perfSONAR is being used. Additional training for staff may be implemented to help them track down and isolate loss events.. They will also create additional documentation for this specific issue. They will tune fault pS detection to be more sensitive to the issue while assuring there will not be too many false positives. Brocade will be talking with Internet2 about software and hardware options to workaround or avoid. They are targeting an upgrade of the Brocade nodes to provide greater resiliency to failures including forcing soft failures to be hard failures. Internet2 is also working with Brocade to investigate mean time between failures to see if there is a manufacturing issue. They have not identified what triggers the Brocade failures. Brocade's upgrades to software will provide more visibility into what is happening.

There is no information on whether other users were affected by soft failures. Internet2 is an aggressive user of new technology, e.g., 100G ports, so Internet2 often sees equipment and software issues early. The failures seem to be hardware issues not software issues (and not OpenFlow related). Additional perfSONAR infrastructure across network interconnection points would help identify and resolve the issue. Internet2 urges users to turn up perfSONAR on their equipment. Internet2 would be interested in a community effort to address best practices and to implement more testing at the edge

AI: Grant Miller will alert the LSN that JET is working on a community approach to implement more perfSONAR infrastructure to address soft equipment failures.

ARIN: Richard Jimmerson

Exhaustion of IPv4 Address Space and Status of IPv6

ARIN was allocated its last /8 address space. ARIN revised its policies to extend the availability of IPv4 addresses in anticipation of their exhaustion. They are initiating a waiting pool for IPv4 addresses. They expect this month to receive a valid IPv4 address allocation request which they will be unable to fulfill. If an applicant requests more address space than is available they are given 3 options:

1. Take a smaller block
2. Join the waiting list for the address space they requested
3. Close the request without filling it

ARIN has 0.12 of a /8 left. By the end of July 2015, the largest block available will be a /24. By the end of summer IPv4 address space is expected to be exhausted. A /10 has been reserved for assisting in transferring to IPv6.

A transfer policy is in-place that enables unused address space to be transferred to other organizations. This will backfill IPv4 requests for awhile. ARIN vets ownership of that address space with the parties involved. There has been a spike in requests for IPv6 address space, likely reflecting the immanent unavailability of IPv4 address space.

AI: Paul Love and Grant Miller will invite Richard Jimmerson to address the JET on address space in the fall of 2015.

SDI Workshop: Grant Miller

The Software Defined Infrastructure (SDI) Workshop is still being planned for July 14-16 at Berkeley Labs, California. The objective is to develop a roadmap for the next three years to develop and demonstrate Layer 2 and 3 SDI domain interoperability. A Dear Colleague letter, a full agenda, a website, and a registration link should be available shortly. See:

https://www.nitrd.gov/nitrdgroups/index.php?title=SDN_Operational_Issues_WS

Emerging Technology Coordination (ETC) forum: Grant Miller

The ETC forum focused on developing an initial capability for inter-domain SDN by focusing on an initial application and sharing resources and capabilities among the ETC forum participant. The group will focus on providing an initial demonstration at SC15 in Joe Mambretti's booth. Azher Mughal offered to provide the LHC FedEx application for the initial demonstration.

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Meetings of Interest:

June 15-18	GEC23 , Urbana Champaign, IL
July 14-16	SDI next steps planning and coordination , Berkeley, CA
July 19-24	IETF93 , Prague, Czech Republic
August 10-14	APAN40 , Kuala Lumpur, Malaysia
September 21-23	CANS2015 , Chengdu, China
September 28-30	ESCC , Austin, TX
Sep 29-Oct 1	Global Lambda Grid Workshop , Prague, Czech Republic
October 4-7	Technology Exchange , Cleveland, OH
October 5-7	NANOG65 , Montreal, QC, Canada
October 8-9	ARIN 36 , Montreal, QC, Canada
November 1-6	IETF94 , Yokohama, Japan
November 15-20	SC15 , Austin, TX

Next JET Meetings:

July 14	12:00-2:00, NSF
August 18	12:00-2:00, NSF
Nov 17	1:30-3:30 CDT, Austin Convention Center, Austin TX

nb: This is concurrent with SC15.