

## **JET Meeting Minutes January 19, 2016**

### **Participants**

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### **Action Items**

1. Jennifer Schopf will inform the JET members of her inexpensive deployments of perfSONAR on ACE.
2. JET members should provide comments on the draft JET charter to Grant Miller ([miller @nitrd.gov](mailto:miller@nitrd.gov)) before mid-March

### **Action Items – carry forward**

1. Bobby Cates will arrange for a DHS presentation on TICs to the JET

### **Proceedings**

This meeting of the JET was chaired by Kevin Thompson of the NSF and Vince Dattoria of DOE/SC.

### **perfSONAR Discussion: Brian Tierney**

perfSONAR is a tool to set network performance expectations, find soft failure problems, and help fix those problems in multi-domain environments. It provides a standard way to publish active and passive monitoring data. perfSONAR components include: measurement tools, measurement archive, host management tools (configure tests, NTP,...), data analysis tools and a lookup service.

perfSONAR collaboration is an Open Source project led equally by ESnet, Internet2, Indiana University, and GEANT. Each organization donates 1.5 FTE to perfSONAR. perfSONAR development is influenced by requests, annual user survey, meetings with VOs, and discussions at workshops. The perfSONAR governance group prioritizes features.

perfSONAR vision is to be the ubiquitous, indispensable, performance monitoring framework for R&E customers. perfSONAR hardware can provide a good 1U host capable of 10Gbps for about \$500. (+10G NIC cost). A 1G host costs around \$150. VMs are not recommended. ESnet maintains about 70 perfSONAR servers, GEANT has 22, Internet2 has 3 open servers and many other organizations maintain multiple servers. Global lookup services are provided by 2 ESnet deployments on the east and west coasts, GEANT, SANREN, RNP, and AARnet.

perfSONAR 3.5 is the latest release (10/15). It increased the number of nodes, reduced costs and improved security. It provided modernized GUIs, central host management and node auto-configuration, support for Debian, VMs and other installations, and support for low cost 1Gbps nodes. It supports use cases of:

- perfSONAR tools only
- Centrally managed perfSONAR hosts
- perfSONAR hosts that self-configure

It provides support for central management. Puppet provides configuration management for many nodes.

In addition to the toolkit install, new options include:

- perfSONAR-tools
- perfSONAR-TestPoint
- perfSONAR-Core
- perfSONAR-CentralManagement
- perfSONAR-Complete: all perfSONAR packages
- Other packages

There is a new host management interface.

Plans for perfSONAR 3.5.1 and 3.6 include:

- Refining the perfSONAR roadmap
- Minor release in 2/16 and a major release in fall 2016.
- Themes being considered include improved support for Science DMZs, campus monitoring and virtual environment monitoring.

Version 3.5.1 will have a new test configuration GUI, more automated testing, and minor bug fixes. Version 3.6 will provide control and scalability. As perfSONAR expands worldwide it will need ways to control who is running tests, how often tests are run, and what hosts tests can be run to.

perfSONAR email lists are:

Announcement List:

<https://mail.internet2.edu/wws/subrequest/perfsonarannounce>

– Users List:

<https://mail.internet2.edu/wws/subrequest/perfsonar-users>

For the complete briefing, please see January 2016 in:

[https://www.nitrd.gov/nitrdgroups/index.php?title=JET\\_Meetings\\_2016](https://www.nitrd.gov/nitrdgroups/index.php?title=JET_Meetings_2016)

## **Network Roundtable**

### **ESnet: Nick Buraglio via email**

Efforts on ESnet 6 are ramping up. We have several paths we're looking at. ESnet has identified a BGP bug in ALU and have been working with ALU to mitigate and fix it (no interruptions of service, we applied a workaround).

ESnet: Brian Tierney

perfSONAR status was just given. The ESnet testbed was down in December and January. It will be partly functioning in February with SDN capability. ESnet is open to new proposals for use of the testbed. Linden Mercer of NRL has applied for use on the testbed.

### **Internet2: Grover Browning via email**

Internet2 implemented configuration changes to assist in traffic reconfiguration. This resulted in a 5-10% drop in traffic on the most heavily used links.

### **ACE: Jennifer Schopf**

The lifetime of the WIX-Frankfort link has been extended to the end of the CY. The ACE link to Paris will continue in operation. perfSONAR has been deployed on ACE and in Ukraine and Kenya with inexpensive equipment. ACE is hoping to extend its path in Africa this year.

AI: Jennifer Schopf will inform the JET members of her inexpensive deployments of perfSONAR on ACE.

### **TransPac: Jennifer Schopf**

TransPac and PacWave implemented a 100G link from Seattle to Tokyo in support of SC15 demonstrations. This link is stable and traffic is being shifted to this link. The link between LA and Tokyo was turned off in May. A second TransPac link is planned out of Tokyo to Guam to provide redundancy to Southeast Asia. The 100G link through Hawaii to Guam will provide local access in Guam for the University of Guam and a number of other users. TransPac hopes to extend this link to Hong Kong. perfSONAR is being run on the TransPac 10G link. There will be a ½ day seminar on perfSONAR at the APAN meeting. TransPac is donating 15 perfSONAR suites to Asian sites. There will be an R&E exchange point in Guam.

### **NASA: George Uhl**

NASA is reconfiguring for symmetric routing to support the NASA TICs. This networking is being managed by the NASA Marshall networking group.

### **NIH: Mike Gill**

NIH has a perfSONAR node.

### **NRL: Linden Mercer**

Nothing new to report

**NOAA: Mark Mutz**

NOAA is rolling out its TICAP infrastructure with 4 out of its 5 sites installed. The Hawaii TICAP was approved for multi-agency use additional users are moving to the TICAP site there. Dallas, Seattle, and DC TICAPS are installed. NOAA is working to install the TICAP in Denver with a 30 April target.

**PacWave: Jonah Keough**

PacWave is cooperating with TransPac on the TransPac link to Tokyo. TransPac is cooperating with the University of Hawaii Pacific on regional connectivity to Guam and to bring up an exchange point. PacWave is experimenting with 100G links.

**3ROX: Michael Lambert**

3ROX has turned up Duquesne University. The University of Pittsburgh is moving to their own Internet2 connection. 3ROX perfSONAR is working on the XSEDE network.

**USDA: Victor Unruh**

ARS is implementing infrastructure to the ARS sites.

**Utah: Joe Breen**

Utah is deploying additional perfSONAR sites. They are beginning planning for SC16 networking for Salt Lake City.

**Exchange Points Roundtable****StarLight: Joe Mambretti**

WIX and ManLan are moving to implement NSI.

StarLight successfully demonstrated 18 100G applications at SC15 with a focus on SDX and SDI capabilities. StarLight continues SDX development activities in conjunction with the Global Environment for Network Innovation (GENI). They are working to implement a Bioinformatics SDX with the Bioinformatics community. They are mapping complex workflows across sites to support research, proteomics, and precision medicine using genomic sequences. StarLight is preparing for 100G links for SC16 in Salt Lake City. There were 138 100G links at SC15. perfSONAR will be implemented for SC16. The international SDX at SC15 was enabled by the NSF international networking program.

**Ames Research Center:**

Nothing new to report. NASA has 6 perfSONAR sites at the edges of its Distributed Archive Center (DAC). There is a test perfSONAR node at Goddard Space flight Center.

**Pacific Northwest GigaPoP: Jonah Keough**

Nothing new to report

**LSN Report: Grant Miller**

JET Charter:

All NITRD groups are being re-chartered. Charters are redrafted every 2 years so the emphasis of the charter is on focus topics and actions over the next 2 years. A draft charter for JET was circulated to the JET members. Please provide comments and suggestions for this charter.

AI: JET members should provide comments on the draft JET charter to Grant Miller (miller @nitrd.gov) before mid-March

Supplement to the President's Budget:

The annual Supplement to the President's Budget has been drafted and comments received from LSN members. The NITRD agency LSN budgets have been solicited by OMB from the agencies and are being incorporated into the Supplement. The Supplement is currently projected to be released on February 9 at the same time as the President's budget is released.

**Meetings of Interest:**

January 27-28	NSF Workshop on Applications and Services, Washington DC
January 24-29	<a href="#">APAN41</a> , Manila, Philippines
February 2-3	NSF Future Wireless Cities Workshop, Washington DC
February 4-5	NSF Workshop: Software Defined Infrastructure/Software Defined Exchange, Washington, DC
February 8-10	<a href="#">NANOG66</a> , San Diego, CA
March 1-2	<a href="#">OIN</a> , Millersville, PA
March 8-9	<a href="#">GEC24</a> , Tempe, AZ
March 29-30	<a href="#">ESCC</a> , Berkeley, CA
April 3-8	<a href="#">IETF 95</a> , Buenos Aires, Argentina
April 17-20	<a href="#">ARIN 37</a> , Montego Bay, Jamaica
May 15-18	<a href="#">Internet2 Global Summit</a> , Chicago, IL
June 12-16	<a href="#">TNC16</a> , Prague, Czech Republic
June 13-15	<a href="#">NANOG67</a> , Chicago, IL
July 17-22	<a href="#">IETF 96</a> , Berlin, Germany

**Next JET Meetings**

February 16	12:00-2:00, NSF
March 15	12:00-2:00, NSF
April 19	12:00-2:00, NSF