

# Meeting Minutes from Joint Techs 12-July-2011 in Fairbanks

## Performance Working Group at Joint Techs at Fairbanks, Alaska

12-July-2011

Welcome -- Carla Hunt

**Internet2 Update -- Aaron Brown and Jeff Boote**

- Aaron Brown noted that Internet2 had recently released a minor release of the perfSONAR-PS Toolkit, version 3.2.0.1
- This version allows folks to download the RPMs from R+E mirrors.
- Aaron asked folks to email him if they were interested in hosting one of these mirrors.
- Aaron noted that they were working on an upcoming perfSONAR-PS Toolkit release, version 3.2.1,
- This version should include bugfixes and some updated packages.
- The release candidate should be out in the next week or so.
- Aaron commented that Internet2 had been working with the ESnet developers on the OSCARS version 6 release, and that it should be available in the next few weeks.
- On the DYNES front, he noted that Internet2 has been working with the DYNES group 'A' participants, and that they were looking to do the first set of DYNES installations within the next few weeks.
- Aaron commented that Internet2 had been working on a circuit monitoring infrastructure as part of the DYNES work, and that he'd given a talk on it earlier.
- Jeff commented that Internet2 was likely going to be working on an NDT project with Google,
- Internet2 might be working with Verizon on a continuation of the work they'd done earlier in developing a measurement infrastructure for Verizon.

**Fiber Asset Management Software -- Carla Hunt, MCNC**

[Slides](#)

To hear an MP3 file recording of Carla's talk, go to <http://noc.ucsc.edu/docs/Fiber-mgmt/> and click on the link that says Carla\_Hunt.mp3

- Eric Boyd asked if the motivation for deploying the fiber database was to meet BTOP requirements.
- Carla said that it was partially motivated to support the BTOP grant, but the bigger interest was to be able to track the fiber, and for planning purposes.
- Jim Warner asked if this software was being used for campuses, or just wide area.
- Carla said that the primary use is for the wide area. The idea was to make it easy for folks whose job was in the campus could easily access the data

**ESnet Distributed Help Desk -- Brian Tierney or Phil DeMar, ESnet**

[slides](#)

- Eric Boyd asked if the 'hub' definition for FermiLab consisted of ESnet's FermiLab box, as well as FermiLab's boxes.
- Phil said that the concept was to have a user-centric view. T
- hey don't care who runs the perfSONAR box, just that they can obtain measurements applicable to FermiLab.
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- Eric asked if this could be extended to a three-level system (e.g. a hub including regional networks and all universities).
- Phil thought that they would go from at the university level. The basic idea was just to keep users from having to select hostnames.
- Carla Hunt asked if the 'hub' metadata was in the lookup service, or was local to the Web UI. Phil wasn't sure, but figured it was local to the Web UI.
- Jim Warner asked if the cached data was kept around longer than the original perfSONAR services would keep it. A number of folks said that perfSONAR services tend to keep data forever.

**Periscope Presentation -- Martin Swany, University of Delaware**

[slides](#)

**IPv6, backbone measurements, and Netflow -- Matt Zekauskas, Internet2**

- Matt said that Internet2 has been monitoring for a long time.
- They've been using firewall filters on the Junipers that are configured to solely measure counts, not block anything.
- They've seen 5G of v6 traffic on the backbone.
- The hardware to do proper flow monitoring is expensive though, so they've implemented a workaround.
- They duplicate all IPv6 packets to a local PC (<1G per site), and do flow generation from those packets.
- This came online just before IPv6 day, and has been monitoring ever since.
- They've been working on a backend to save and make available all these statistics.
- He noted that the data is available if researchers are interested in it, and that it is anonymized (80-bit zeroed, he thinks).

Brian Tierney asked if the backbone bwctl and owamp measurement traffic was using IPv6. Matt said that it was, but that the measurements being shown was connector traffic, and not backbone traffic.

## Issues around Buffer Bloat - Jim Warner, UC Santa Cruz

- Jim Warner noted that Jim Getty has been promoting the "buffer bloat" issue.
- Jim Warner felt that the mailing lists and websites like fasterdata.es.net were telling people that bigger buffers aren't a problem.
- Carla Hunt asked what the recommendation that the mailing lists and websites are suggesting?
- Jim said that fasterdata.es.net recommended an outbound queue length of 1000 packets for 1G, and 10000 packets for 10G.
- He felt that was far too much buffer at home.
- Most of the buffers filling up are in the DSL boxes which are unchangeable.
- He noted that the outbound traffic can be shaped so that DSL queueing doesn't happen.
- Martin Swamy felt that this was a TCP problem.
- He felt it was misguided to screw with sending so that TCP doesn't get confused.
- Jon said that TCP worked that way, and because of that, we can't ignore it.
- Jon thought the problem with buffering was that it was dependent on the link speed the router was attached to.
- One megabyte of buffering was nothing for 1G ethernet, but on DSL, it's forever.
- Jim noted that the effect of all this "hidden buffering" was a large percentage of a second (1/3 and higher).
- Prasad noted that it can be even worse on a noisy channels like wireless where retransmits happen after 60ms so you can get even higher blocking times.
- Jim said that wireless was a problem for lots of reasons, including that valid wireless speeds varied from 2Mbps to 100Mbps.

## AGENDA AND ABSTRACTS

### Fiber Asset Management Software -- Carla Hunt, MCNC

- In November 2010, MCNC, an independent 501 c3 nonprofit that operates the North Carolina Research and Education Network, issued an RFP for identifying an appropriate vendor to supply fiber asset management and mapping software to be used to document and manage existing and planned Outside Plant (OSP), allowing MCNC to accurately document the location and status of fiber assets in North Carolina that are being acquired as a result of the Broadband Technology and Opportunities Program (BTOP). Carla Hunt from MCNC will describe the process for developing the RFP and evaluating vendor offerings.

### ESnet Distributed Help Desk -- Brian Tierney or Phil DeMar, ESnet

- The E-Center Network Weather & Performance Monitor is a project whose goal is to provide a single location for researchers to obtain detailed network path information of interest, and seek assistance with related concerns. This talk will describe the project, and detail its progress so far.

### Periscope Presentation -- Martin Swamy, University of Delaware

- Periscope Presentation Abstract: Measurement is critical for understanding system performance, but it is often difficult in distributed environments. This talk describes a framework called Periscope that extends and integrates existing perfSONAR, XSP and NetLogger systems to provide end-to-end, activity-specific measurements that can potentially handle all relevant performance data for a given user's activity in a distributed system.

### IPv6, backbone measurements, and Netflow -- Matt Zekauskas, Internet2

- This short presentation will highlight the IPv6 measurements on the Internet2 backbone, and the recent addition of flow data.

### Issues around Buffer Bloat - Jim Warner, UC Santa Cruz

- Buffering by network switches can cause excessive delay in packet delivery which can have negative consequences for latency sensitive applications such as VoIP. This phenomena, dubbed bufferbloat, has recently garnered widespread attention in the popular press. Members of the R+E community will discuss the challenges in handling bufferbloat in their networks.