perfSONAR Working Group

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Spring Member Meeting
Overview

- Introduction
- Who we are
- Creating a Standard
- Current Services and Releases
- Visualization Overview
- Future Directions
- CFH
Introduction - Motivation

• Most organizations perform monitoring and diagnostics of their own network
• Networking is increasingly a cross-domain effort
• Monitoring and diagnostics **must** also become a cross-domain effort
Introduction – Why perfSONAR?

• A set of protocols and data schemas, implementing a SOA to share/control network performance tools
  • Implementing Open Grid Forum (OGF) Network Measurement (NM-WG) recommendations
• A community of users and developers
• Multiple sets of interoperable software
Introduction - Architecture

Data Services
- Measurement Points
- Measurement Archives
- Transformations

Analysis/Visualization
- User GUIs
- Web Pages
- NOC Alarms

Infrastructure
- Authentication Services
  - Information Services
    - Service Lookup
    - Topology
    - Service Configuration
Introduction - perfSONAR-PS

- Community effort lead by Internet2 delivering a new flavor of perfSONAR:
  - Developed in Perl
  - Identical perfSONAR Protocols
  - Strengthen standard, demonstrate interoperability
  - Goals: easy to install/deploy/maintain/extend
  - Targeted at University NOC, LHC Community
Who We Are

• ESnet
• Fermilab
• Georgia Tech
• Indiana University
• Stanford Linear Accelerator Center
• University of Delaware
• Internet2 Staff
Creating a Standard

- Entering into the Standards track in the OGF
- First BoF meeting planned for OGF 23 (June 2008)
- Standard drafts planned for OGF 24 (Sept 2008)
- Joint effort between all perfSONAR members and OGF community
Current Services

• Release 0.09 (Available through CPAN and RPM [Yum repo coming soon!])
  • SNMP Measurement Archive
  • Lookup Service
  • Link/Circuit Status
  • Topology
  • PingER Measurement Archive/Point
  • perfSONAR-BUOY
  • OSCARS Measurement Archive
• Visualization
Visualization

- DCN Weathermap
- DCN Web Administration
- perfSONAR-PS Fusion
- Google Maps
- PingER Latency Monitor
- ESnet Interface Monitor
- Traceroute/Utilization Mapping
Visualization – DCN Services

- DCN Weathermap
  - Back for its 3\textsuperscript{rd} encore!

- DCN Web Administration
  - Controlling Information requirements of DCN software
  - https://dc211.internet2.edu/cgi-bin/dcn.cgi
Visualization – Fusion

• Demonstration of the 'fusion' capable between control plane control (DCN) and monitoring (perfSONAR):
  • Continuous data monitoring (SNMP MA)
  • Information Discovery (LS)
  • Control Plane Knowledge (OSCARS MA)

• Future Integration:
  • TL1 Monitoring
  • Topology Service
  • Direct tracking of DCN circuits
Visualization - GMaps

- Google Maps
  - Supports latency measurements (PingER)
  - Topology Service integration
  - Lookup Service integration
  - http://packrat.internet2.edu:8008/
Visualization - PingER

- PingER Latency Monitor
  - Configured based on a PingER installation
  - Scheduled connectivity/link quality tests
  - Easily extensible to additional points
  - No software requirements for target hosts (universal 'ping' measurement)
  - Only implemented Layer 3/4 monitoring for LHCOPN.
- http://tukki.fnal.gov/pinger/graph_pings_gd.pl
Visualization - SNMP

• ESnet is testing a new way to visualize data:
  • http://stats1.es.net/public/metzger/test5.html
Visualization - Traceroute

• Finding your way in addition to seeing a snapshot of path utilization:
  • https://performance.es.net/cgi-bin/level0/perfsonar-trace.cgi
Google Summer of Code

• Students working on perfSONAR-related projects as part of Google Summer of Code
• NPToolkit Improvements
  • Will integrate perfSONAR services into NPToolkit
• perfSONAR Web Administration
  • Pluggable web application to manage perfSONAR services
• Python IDC API
  • Currently, OSCARS IDC only has a Java API
  • Python API will ease integration between perfSONAR and DCN
Future Directions

• Infrastructure
  • Information Service Improvements
  • Integration into existing NPToolkit ISO
  • Web-Based Administration - Google Summer of Code

• Analysis
  • DCN – perfSONAR integration

• Visualization
  • Perl TK/Web based improvements
  • Ideas?
Community Involvement

• We are always looking for help:
  • Analysis
  • Visualization
  • Testers

• Get involved:
  • i2-perfsonar@internet2.edu
  • https://wiki.internet2.edu/confluence/display/PSPS/Home
Questions?