OSG Area Coordinators

Network Monitoring Update: **June 24, 2015**

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Key Initiatives in Network Area

- Improving perfSONAR-PS toolkit for OSG
  - perfSONAR 3.4.2 widely deployed (202 out of 241 on 3.4.2)
  - Track details at http://grid-monitoring.cern.ch/perfsonar_coverage.txt
  - Version 3.5RC1 out in two weeks
- OSG modular dashboard service / OSG network service
  - "Datastore" should be production by end of July.
  - Lots of work involved in getting this production ready
  - RSV probes are also publishing to ActiveMQ hosted at CERN
- Outreach and community interaction
  - Participated in LHCOPN/LHCONE meeting. Presented on perfSONAR
  - Co-chairing WLCG Network and Transfer Metrics WG
    - Last meeting June 8; next meeting July 8
  - Ongoing meetings/interactions with perfSONAR developers
  - PuNDIT (OSG satellite) testing on perfSONAR testbed in OSG..

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Recent Accomplishments

- Version 3.4.2 of perfSONAR out and auto-updated at most sites
  - Tracking an issue with the nightly service restarts "hanging" specific OWAMP tests
  - See http://maddash.aglt2.org/rrd/ (note the daily cycle of working/missing changes)
- Progress on datastore; production datastore hardware arrived and online.
- Code to publish network metrics to a message bus tested and working.
  - Proposed as a quick way to help debugging and allow easy access (more later)
- Numerous issues fixed/addressed for specific instances
  - Mis-configurations; some hosts <4GB ram; residual problems from 3.4.1; firewalls
- New effort "MadAlert" started (see later slide)
- Effort from WLCG to follow-up with problematic perfSONAR instances ongoing (12 month qualification task for ATLAS at 0.5 FTE). Sites being contacted
- Updating of bandwidth and traceroute tests completed
  - Switched from Iperf to Iperf3; traceroute to tracepath didn't work; reverted to troute
- New metrics on data-freshness being used to isolate problems
- LHCONE point-to-point test-bed previewing "network control" demonstrated at LHCOPN/LHCONE meeting July 2.
  - Showed Caltech, Michigan and Vanderbilt working with circuits via Internet2/Esnet.
  - Working on augmenting by adding FIU, UTA and Florida

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Known Issues

- MaDDash using the datastore has filter issue (cells are not properly split top/bot). Problem fixed in "head" repo.
- OWAMP tests impacted by nightly service restarts. Fix being tested
- Some perfSONAR instances "clogged" with remnants from 3.4.1 or before. Mostly cleaned up; a few nonresponsive sites
- No easy way to configure meshes for non WLCG OSG sites
  - Have created a temporary mesh to host them for now
- Underpowered perfSONAR instances (<4GB ram) having problems in some cases. Campaign to upgrade/replace them.
- Some perfSONAR instances not auto-updating or not exposing all needed info. Usually site "choice"
- Must test/document migrating datastore (Esmond) to new hardware or to archive old data to different locations

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Top Concerns

- OSG Network Datastore is primary focus
  - **Plan is in place to get to "production"**
  - Weekly meetings of a subgroup: target production by July
  - Validity testing has exposed bugs; almost all resolved.
    - Last known issue may be a "tool type" misunderstanding. Some data may be incorrectly referenced. Fixed this week.
- **Updated RSV pilots are publishing to message bus at CERN. Should this be put into "production"? (later slide)**
- Must optimize new hardware setup to support datastore.
- Still 22 (down from 41 last time) instances with multiple problems.
  - Follow-up via ATLAS qualification task helping

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Logical Diagram of Datastore
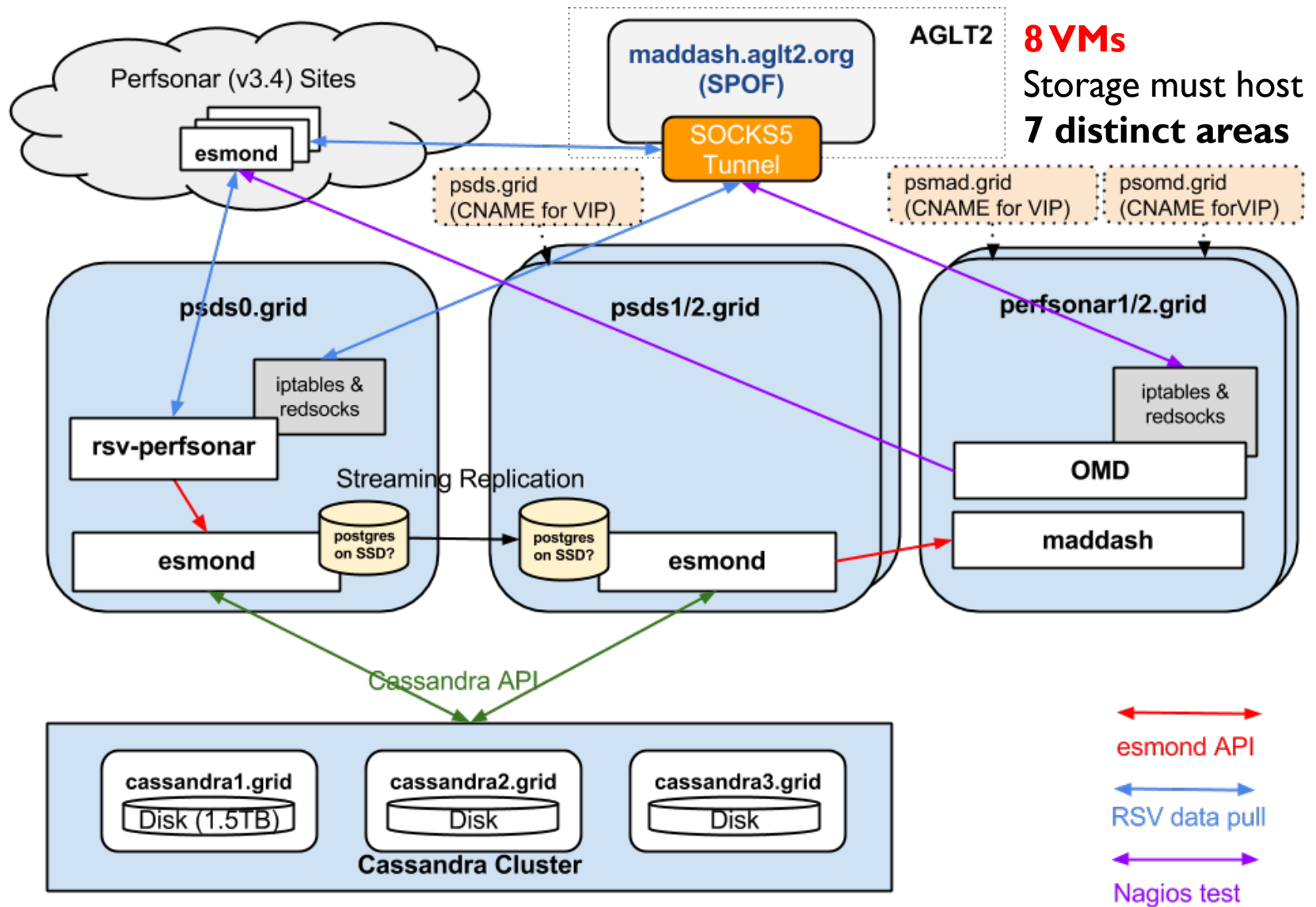
Publishing Net-Data to MQ?

- Edgar has implemented Marian's code to allow the RSV perfSONAR probes to publish data to the MQ instance at CERN
  - ◦ Works well so far.
  - ◦ Generating 102K OWAMP records / hour (2.3 GB/hour; data not summarized like Esmond)
- WLCG/CERN willing to put into production.
  - ◦ Want a go-ahead from OSG. Will create 3-node cluster to host service at CERN
  - ◦ Would allow subscriptions to data from clients
  - ◦ Doesn't "persist" data; only provides access to specific subscribed data to users
- **Discussion on this? Concerns?**

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New Project: MadAlert

- Gabriele Carcassi (original author of GUMS) is working with me at Michigan on a new project for one of our OSG Networking Goals: alerting on problems
- The idea is to use the MaDDash API to analyze the data we are acquiring to identify problems based upon patterns in the data collected.
  - Just started this week. Will be hosted in GitHub
  - Gabriele only 20%
- Seeking input on which problems we might be able to identify
- More information by the next Net AC report

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Questions or Comments?

Thanks!

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URLs of Relevance

- Network Documentation
https://www.opensciencegrid.org/bin/view/Documentation/NetworkingInOSG
- Networking CLI tools:
https://twiki.grid.iu.edu/bin/view/Documentation/Release3/NetworkPerformanceToolkit
- Deployment documentation for both OSG and WLCG hosted in OSG (migrated from CERN)
https://twiki.opensciencegrid.org/bin/view/Documentation/DeployperfSONAR
- New 3.4 MA guide https://code.google.com/p/perfsonar-ps/wiki/MeasurementArchiveClientGuide
- Modular Dashboard Replacement Prototypes
  - http://maddash.aglt2.org/maddash-webui
    https://maddash.aglt2.org/WLCGperfSONAR/check_mk
- perfSONAR-PS Installation Motivation:
https://twiki.grid.iu.edu/bin/view/Networking/WhyPerfSNOAR
- Esmond install info http://antg-dev.es.net/esmond-docs/rpm_install.html
- Mesh-config in OSG https://oim.grid.iu.edu/oim/meshconfig
- perfSONAR homepage: http://www.perfsonar.net/

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