OSG Area Coordinators

Network Monitoring Update: **May 7, 2014**

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Key Initiatives in Network Area

- OSG modular dashboard service / OSG network service
  - The prototype monitoring is ready to migrate to OSG
  - Need "Datastore" component one way or another
- Improving perfSONAR-PS toolkit for OSG
  - Release 3.3.2 available on February 3. Fixed all known issues except intermittent PingER DNS lookup issue (PingER will be removed)
  - New version 3.4 in the works (lots of good updates)
  - Still need to get ALL OSG sites to install
- Documentation updates: network tools & troubleshooting
  - No major updates since internal review
  - Working on some How-to Debug examples for MaDDash
    - See WLCG presentation https://indico.cern.ch/event/289680/
- Outreach and community interaction
  - Attended LHCONE/LHCOPN last week(see URL above)
  - Planning new "Networking and Transfer Metrics WG" in WLCG

Top Concerns

- Prototyped dashboard/monitoring replacement working but now needs to migrate into OSG
- OSG Network Service into "production" and fully functional
  - **Need a way to store the data. Options:**
    1. **Leverage upcoming perfSONAR MA in version 3.4. Info at https://code.google.com/p/perfsonar-ps/wiki/MeasurementArchiveClientGuide (timescale ~few months?)**
    2. **Build our own? Soichi exploring MongoDB**
    3. **Use old version (not really viable)**
       - **Misses traceroute and pinger data.**
       - **Based upon orphaned dashboard code**
  - Replacement needs to be evolved
    - Need OSG "home" to migrate prototype replacements into.
  - We should start migrating/consolidating into OSG Operations
- Automate creation of the mesh-config from OIM/GOCDB
  - Discussed with Soichi
    - Need more meta-data (which sites are in which clouds, emails, names, lat./long.)
  - Have all sites register in OIM instead of GOCDB/OIM?
- Breadth of deployment: We have only WLCG-OSG sites with deployments.

Recent Accomplishments

- Finished WLCG perfSONAR deployment task-force
  - Final report at https://indico.cern.ch/event/309125/
  - All but 8 sites deployed in WLCG and 6 of those working on it
- Planning with Rob/Soichi on OSG networking service
- Continued testing/maintenance on alternative components for the Modular Dashboard
  - See http://maddash.aglt2.org/maddash-webui for MaDDash implementation
  - See https://maddash.aglt2.org/WLCGperfSONAR/check_mk for OMD (login is WLCGps and pw given on call)
  - ESnet is very supportive. MaDDash will be supported for foreseeable future
- Engagement with LHCONE/LHCOPN, WLCG and GDB communities at recent meetings at CERN, Rome
  - Positive feedback.
  - Strong interest in being able to ACCESS the network metrics
  - Need to get the data gathered and accessible for "clients"
  - Planning new WLCG working group to ensure metrics are being regularly collected and available. Needs discussion….

Soichi's notes on recent discussion: Tasks on Soichi's list for 2014…

- Host OMD (Open Monitoring Distribution) and MaDDash instances at GOC. Shawn currently runs his OMD and MaDDash instances on his VMs. We need to host these services at GOC after creating install scripts for them. OMD and MaDDash can run on the single VM instance.
  - Following are Shawn's current instances
  - MaDDash (see http://maddash.aglt2.org/maddash-webui/index.cgi?dashboard=WLCG%20sites) to provide the test overview
  - OMD (http://omdistro.org/start) to check end-host services (see https://maddash.aglt2.org/WLCGperfSONAR/check_mk/index.py?start_url=%2FWLCGperfSONAR%2Fcheck_mk%2Fview.py%3Fview_name%3Dhostgroups) [credentials WLCGps/xxxx]
- Replace our existing perfsonar.grid.iu.edu (which runs MaDDash-collector and TomW's datastore v2) with services from item #1 and update MyOSG to use MaDDash - MaDDash can consume mesh configs just like Tom's datastore could, and I believe it already allows JSON export of various data.
- #3(a) Update OIM/Perfsonar service entries to include all necessary parameters in order to generate a valid mesh config. Shawn will look into a possibility for WLCG to register their perfsonar instances on OIM so that we can generate mesh config for both OSG and WLCG sites.
- #3(b) Update OIM/SE services to include list of *nearest* perfsonar instances to be used for each SE. This allows programmatic querying of perfsonar instance from the SE URL.
- #4 Continue R&D on collecting information on MongoDB & aggregate information for specific end-user use-cases - similar to how GOC rsvprocess aggregates information from RSV-Gratia DB in order to generate status graphs for MyOSG.

OSG Network Service Datastore

- To me this is the "biggest" issue
- We can collect perfSONAR data now
  - Current OSG service gets data via SOAP
    - Slow, lots of overhead
    - Getting data for USCMS and USATLAS sites into OSG
- But…No place to keep it?
  - Old datastore (orphaned code) missing traceroute
  - We need to have a way to store:
    - **Traceroute** (taken 1/hour between all sites)
      - Kept for 45 days or longer
    - **Latency/packet-loss** (continuous)
      - Save results each minute? Keep for 45 days?
    - **Bandwidth** (1/6-hours within clouds, 1/week WLCG-wide)
      - Keep for 3 months?
- New MA coming which *may* work…

perfSONAR v3.4 Measurement Archive (MA)

- New measurement archive being developed with a RESTful interface
  - At least **100 times faster** to query
  - Extensible for including new metrics
  - Still a few months away (June 2014)
  - Timeline https://code.google.com/p/perfsonar-ps/wiki/RoadMap
  - Open for comments/input **now**
- Will this work for us? **Can we wait?**
- Perl API http://code.google.com/p/perfsonar-ps/wiki/MeasurementArchivePerlAPI

Near term items

- Test/Explore v3.4 MA…will this work as OSG datastore?
- **Migrate prototypes into OSG…**
  - **Goal is one service/dashboard for OSG (and WLCG)**
  - **Lots of questions about integration with MyOSG vs standalone components**
  - **Define Operations responsibilities vs OSG/WLCG's**
- Expand automated creation of "mesh-configs"
  - Prototype and test creation of WLCG meshes.
  - Needs interaction between Soichi and CERN/GOCDB experts.
- Continue upgrades for sites with perfSONAR-PS versions prior to 3.3.2 (33 sites); ensure mesh-config use
  - Identify and lobby non WLCG OSG sites to install
- Using and improving the OSG network service
  - As sites upgrade and use the mesh, verify data, displays
  - Begin testing "clients" of OSG network metrics
    - Will require some API changes to get certain typical queries
- Continued documentation updates and additions
  - Maintain/update documented procedures

URLs of Relevance

- Network Documentation https://www.opensciencegrid.org/bin/view/Documentation/NetworkingInOSG
- perfSONAR-PS OSG Installation Instructions

  https://twiki.opensciencegrid.org/bin/view/Documentation/PerfSONARToolKit
- 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
- Initial OSG mesh details http://confluence.grid.iu.edu/display/CENTRAL/Perfsonar+Mesh+Configs

Questions or Comments?

Thanks!