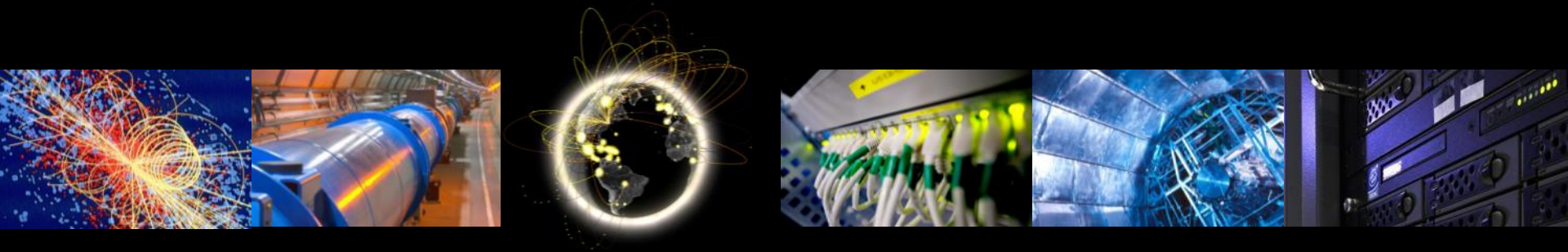


# Network and Transfer WG perfSONAR operations

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Network and Transfer Metrics WG Meeting  
28<sup>h</sup> January 2015



# Outline

- Configuration interface
- Infrastructure monitoring (OMD)
- Datastore
- Broadcast
- Status in OPN and LHCONE
- Proposal for changes in mesh configurations
- perfSONAR workshop summary

# Actions from last meeting

- Experiments: Provide input to the use case document, thanks to those who have done that already
  - <https://docs.google.com/document/d/1ceiNITUJCwSuOuvbEHZnZp0XkWkwdkPQTQic0VbH1mc/edit>
- Meeting on use cases will take place on 18<sup>th</sup> of February

# Demos

- Configuration interface
  - <https://oim.grid.iu.edu/oim/meshconfig>
- Infrastructure Monitoring (OMD)
  - <https://pfomd.grid.iu.edu>
- Datastore
  - <http://pfds.grid.iu.edu/>
- Maddash
  - <http://pfmad.grid.iu.edu/>
  - Connected to datastore

# Broadcast

- Remind all sites to upgrade to 3.4.1
- Announce availability of the infrastructure monitoring for sites
  - requires valid user certificate registered in one of ATLAS, CMS, Alice, LHCb, GOCDDB or OIM contact
- FAQ and troubleshooting guide
  - <https://twiki.opensciencegrid.org/bin/view/Documentation/TroubleFAQPS>
- Deadline for sites to upgrade: 9<sup>th</sup> February
- GLIBC “ghost” security issue – all sites need to reboot for auto-update to take effect

# OPN/LHCONE

- Status available at
  - [http://grid-monitoring.cern.ch/perfsonar\\_report.txt](http://grid-monitoring.cern.ch/perfsonar_report.txt)
- Current issues:
  - OMD doesn't capture all failures yet
  - Issues with stability (SARA, NDGF, KISTI, RAL)
    - BWCTL disabled, Regular Testing disabled, esmond unreachable, Homepage fails with status 500 (internal server error)
  - OSG subnet white-listing missing
  - Meshes not configured (but there are also false negatives)
- For OPN nodes (but also others) – very important to disable excessive logging
  - [https://twiki.opensciencegrid.org/bin/view/Documentation/TroubleFAQPS#My\\_perfSONAR\\_disks\\_are\\_filling\\_u](https://twiki.opensciencegrid.org/bin/view/Documentation/TroubleFAQPS#My_perfSONAR_disks_are_filling_u)

# Mesh Configuration

- Current
- All inter-cloud tests are disabled
- Latency
  - Full mesh within each cloud – btw LT nodes, continuous (10Hz) [1]
- Bandwidth
  - Full mesh within each cloud – btw BW nodes, every 6hrs (duration: 30s)
  - All WLCG – full mesh, btw BW nodes, once a week
- Traceroutes
  - All WLCG – btw BW nodes, hourly
  - LHCONE, USCMS, USATLAS, GOC – btw BW nodes, every 20mins

# Mesh Configuration

- Proposed
- Keep all inter-cloud tests disabled
- Latency
  - Keep Full mesh within each cloud – btw LT nodes, continuous (10Hz) [1]
  - Add Top-k WLCG – full mesh btw. top 50 sites – ramp up to all sites once this is working
- Bandwidth
  - Keep Full mesh within each cloud – btw BW nodes, every 6hrs (duration: 30s)
  - Disable All WLCG – full mesh, once a week
- Traceroutes
  - Keep All WLCG – btw BW nodes, hourly
  - Keep LHCONE, USCMS, USATLAS, GOC – btw BW nodes, every 20mins



# Summary

- Top issues in the infrastructure
  - Stability (extensive logging filling up disks, regular testing not running, bwctl disabled)
  - Meshes not configured correctly (also due to a bug in perfSONAR)
  - OSG subnet not white-listed correctly (affects core infrastructure)
- Need your help to fix issues with sites
  - Starting with OPN and LHCONe and then moving on to rest of the infrastructure
  - Campaign in OPN LHCONe can start ASAP – to be followed up by general campaign with all sites (after 9<sup>th</sup> of February)
  - All sites should be on 3.4.1 by then
    - 3.4 is not good enough as it means sites didn't enable auto-updates (metric perfSONAR 3.4+ Toolkit version will be critical if this is the case)
  - All sites need to pass all metrics in OMD
    - Listed in the order of importance – perfSONAR Toolkit Version, perfSONAR 3.4+ Toolkit Version, BWCTL/OWAMP, Mesh Configuration, Regular Testing, Esmond reachability, all the others
  - Please CC [wlcg-perfsonar-support](#) in your communication
- We will keep adding new tests to OMD
  - IPv6 – to check if IPv6 is enabled (will issue warning if not)
  - esmond freshness (critical if no data for past 24 hrs)



# perfSONAR Workshop Summary

# FTW: perfSONAR Deployment Best Practices, Architecture, and Moving the Needle

- COLUMBUS, Ohio, Jan. 27, 2015—“We are here to enable science. Big science, with big data, is affected by network failures.”
- “And with that, Brian Tierney, group leader of the ESnet Advanced Network Technologies Group at Lawrence Berkeley National Laboratory, kicked off a two-day workshop on perfSONAR, a tool for monitoring and measuring network performance from its starting point to its end point.”
- [Press release at http://www.internet2.edu/news/detail/7727/](http://www.internet2.edu/news/detail/7727/)

# Summary of perfSONAR Workshop

- Held in Columbus Ohio January 21-22, 2015
  - First day was set of tutorials on how to install, configure and use perfSONAR
  - Second day focused on those running large-scale deployments and highlighted best practices and future growth
- Shawn presented for WLCG/OSG (see <https://meetings.internet2.edu/2015-ftw-perfsonar-deployment-best-practices/program> )
- Lots of good discussions and requests for the future (Brian Tierney's notes):
  - perfSONAR feature requests: (In red are requests from WLCG/OSG)
    - ability to easily compare 2 traceroutes
    - ability to overlay AL2S data
    - add disk space, interface errors, load, ntp sync status to output from <http://hostname/toolkit/?format=json>
    - expose NTP status in the GUI
    - better tools to tell me how many people are testing to me, and display this info on the Toolkit homepage
  - Need the ability to plot test errors: indicate when a test fails
  - Community registration service :ability to register the type of a perfSONAR nodes, such as:
    - NREN, regional, site border, site internal, Science DMZ, exchange point
  - Ability to specify the type of access for a given node. e.g.:
    - public, R&E only, private, with permission (e.g.: send email to request getting added to ACL), locale site only
  - Other random ideas:
    - Use data from Internet2's deep field system to recommend what sites to test to?
    - have a service that recommends who to run tests to based on load, topology, etc
    - we should contact vendors about embedding perfSONAR

# AOB

- Next meetings
- 18 Feb – Use cases
- 18 March, 8 Apr, 6 May
- (all at 4pm CEST)