



OSG Area Coordinators

Network Monitoring Update: **February 22, 2017**

Shawn McKee

Review Networking Goals Year 5

1. **Maintain / update the OSG networking services / documentation.**
2. **Reach out to non-WLCG OSG sites; Integrate those interested:**
 - Advertise that OSG is ready to help sites with networking issues via:
 - OSG web pages
 - Targeted email (Cyberinfrastructure list, perfSONAR user list, etc)
 - Via interactions with sites at conferences and meetings.
 - Encourage as many NSF CC*xxx sites as possible to integrate their perfSONAR instances into OSG networking; OSG will provide them a mesh-configuration and gather their data.
 - **Provide Soichi's standalone mesh-configuration tool for use by campuses and VOs.**
3. **OSG will create a network alerting service to find “obvious” network problems**
 - **This will involve the creation of a suitable analysis pipeline such that perfSONAR data can be analyzed on a timescale of every 1-2 hours.**
 - Obvious problems include significant decrease in bandwidth between a source and destination or continuing significant packet loss along a path or correlated with a specific site.
 - Actual alerts will be issued by GOC staff based upon alarms they receive.
4. **Enable automated alerting (email, SMS) on well identified alarms.**
 - This is a “reach” goal for the year but I think it should be feasible
 - Requires accurate, synchronized mapping of sites to contacts
 - Tunable pattern of alerts (e.g., 1 alert, wait 1 day and alert if problem continues, then every 3 days until fixed)

Review: The Slipped Milestones

- Recruiting of 10 new sites for OSG networking -- **October 31, 2016 (slipped)**
 - Side tracked still waiting for MCA and pS v4.0
- Initial release of Soichi's standalone mesh-configuration utility packaged and available --- **September 30, 2016 (Moved)**
 - More details on status later
- Initial Alarming system into production --- **December 1, 2016 (partial)** – more later

Recruiting non-WLCG Sites

- One passed set of milestones was to recruit 10 (or more) non-WLCG sites who have perfSONAR instances to “join” OSG
 - This means they use the OSG mesh-configuration to define tests
 - OSG will gather metrics from their instances
 - Our dashboard and `check_mk` will display their metrics and monitor their perfSONAR services
- Delayed: still waiting for the standalone meshconfig and perfSONAR v4.0
 - Makes sense to recruit when those are ready
- Plan a target email campaign soon.
 - Operations + User Support help?
 - Suggestions needed and welcome.

Standalone Mesh-config (MCA)

- Soichi was approved Nov 16 to work 20% on this for 4 months followed by 10% for 2 months
 - Started in January
 - **Great progress since then**
- Documentation at <http://docs.perfsonar.net/mca> and at <https://github.com/soichih/meshconfig-admin>
- Issues tracked at <https://github.com/soichih/meshconfig-admin/issues> (14 open, 7 closed)
- OSG instance running at <https://meshconfig-itb.grid.iu.edu/> (create an account to play with this)
 - Now 257 hosts imported from OIM/GOCDDB
 - New API available <https://meshconfig-itb.grid.iu.edu/apidoc/>
 - **Close to being ready to use for production**

MCA Screenshot

The screenshot displays the MCA web interface. The left sidebar contains navigation links: Configs (selected), Hosts, Host Groups, and Testspecs. The main content area is divided into two panels. The left panel, titled 'MESH CONFIGS', shows a list of 5 mesh configs. The right panel displays the details for the selected 'USATLAS Mesh Config'.

MESH CONFIGS
Showing registered mesh configs

5 Mesh Configs

| Mesh Config | Host Group | Created |
|---|------------|--------------|
| /us-atlas USATLAS Mesh Config | | Jan 30, 2017 |
| /test-dynamic Soichi's Dynamic HostGroup Test | | Jan 30, 2017 |
| /test Soichi's Test Config | | Jan 23, 2017 |
| /ps-testbed perfSONAR Testbed | | Jan 22, 2017 |
| /soichi-test test | | Jan 23, 2017 |

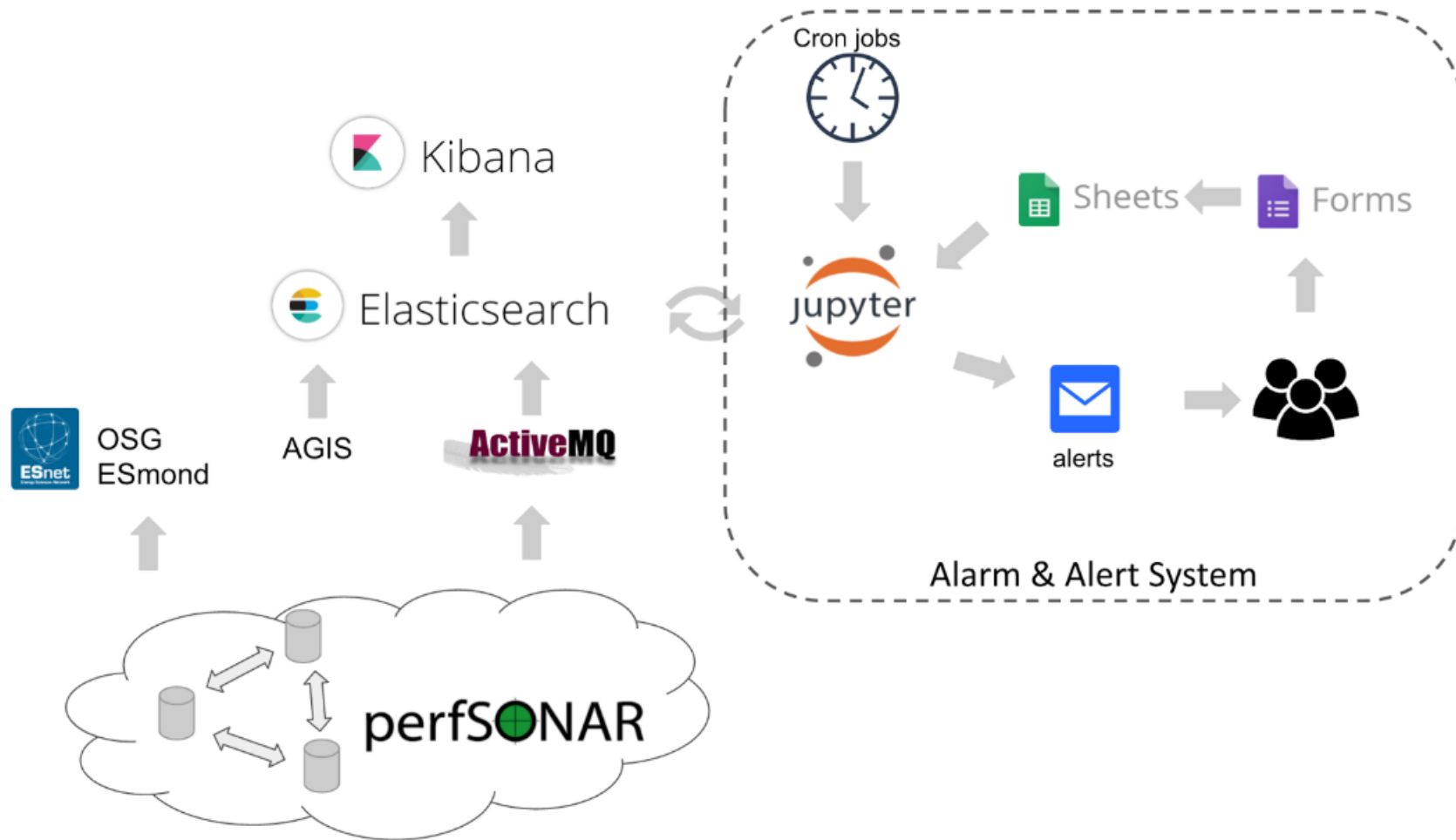
USATLAS Mesh Config Details:

- MeshConfig URL:** <http://meshconfig-itb.grid.iu.edu/pub/> us-atlas [Open MeshConfig](#)
- Name ***: USATLAS Mesh Config
- Description**: Clone of perfsonar.nersc.gov
- Admins**:
 - Soichi Hayashi <hayashis@iu.edu>
 - Shawn McKee <smckee@umich.edu>
 - Marian Babik <marian.babik@cern.ch>
- Users who can update this configuration**: (Empty)
- Tests**:
 - ☒ Enabled (include in mesh config) [Remove Test](#)
 - Test Name**: USATLAS Traceroute Test
 - Service Type**: Traceroute (tra)
 - Mesh Type**: Mesh
 - Host Group A**: USATLAS Traceroute Test (12 Hosts)
 - atlas uct2-net2.mwt2.org
 - atlas iut2-net2.iu.edu
 - atlas mwt2-ps02.campuscluster.illinois.edu
 - atlas psum02.aglt2.org
 - atlas psmsu02.aglt2.org
 - No Agent**: Enter Hostnames

Enabling Alarming

- We have a longer term goal of alerting and alarming on network issues.
- Milestone completed: technical design of a suitable analysis system based upon existing time-series technologies
- Current operating implementation gathers all perfSONAR data OSG sends to CERN and puts it in ElasticSearch.
- Jupyter instance regularly runs cron tasks to analyze data
 - Anyone can subscribe to simple alert-emails.
 - <http://tiny.cc/RegATLASAlarm>
 - Not “production” yet. Will need lots of packaging for end-user use.

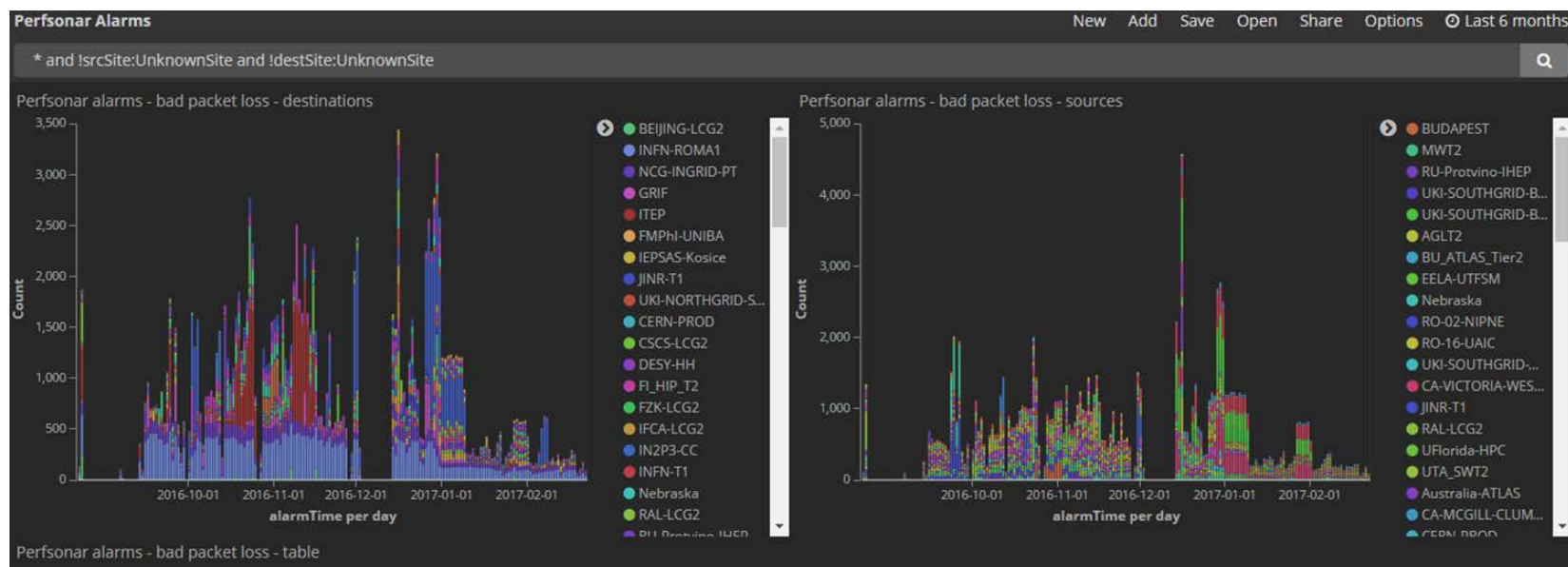
Logical Diagram: Alarm/Alert System



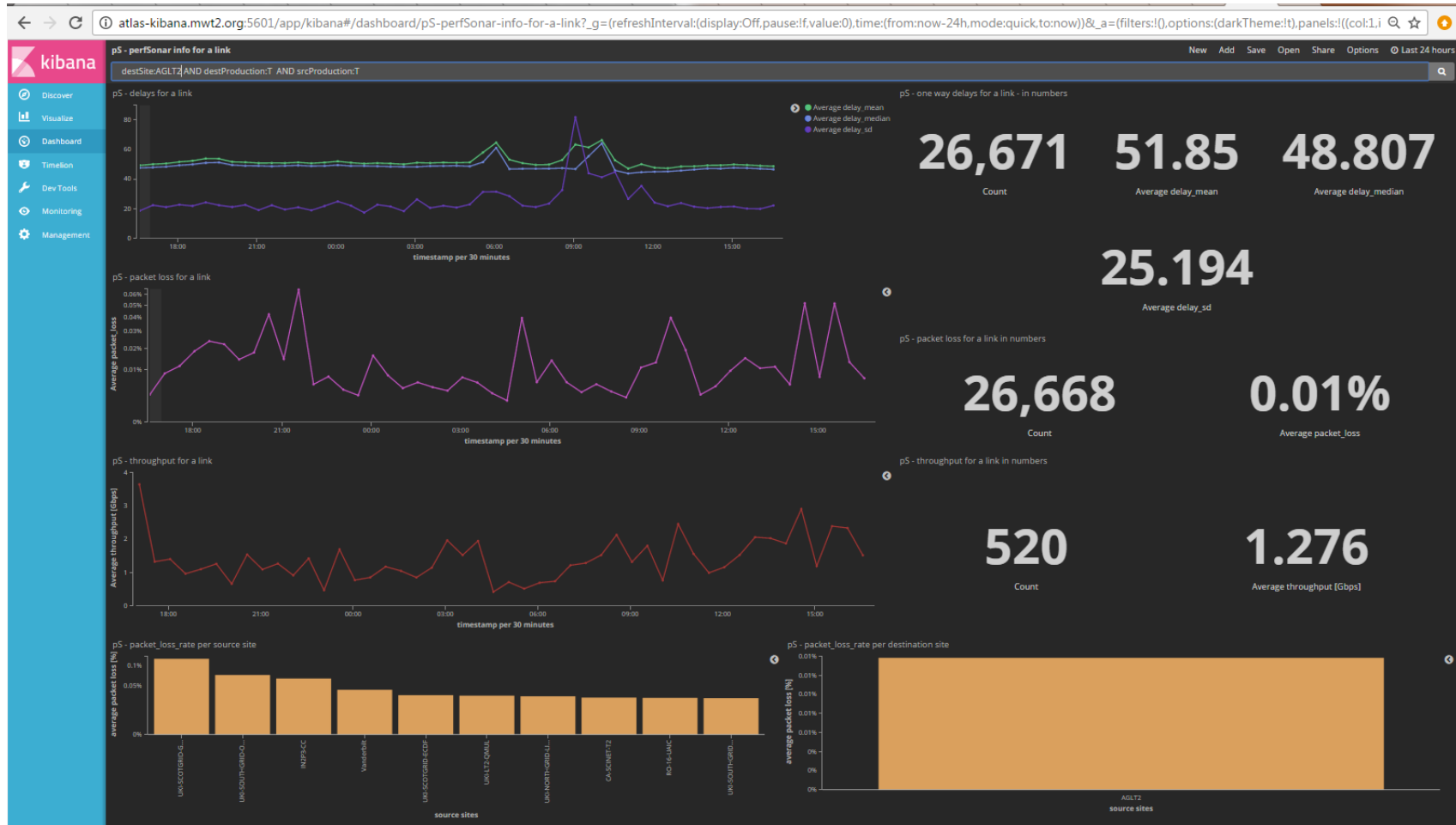
Examples of Network Analytics

- Using the ELK setup from Ilija Vukotic/UC we can look at some of the network data results
- This link shows the last 6 months of packet loss results by source/destination:

<http://tiny.cc/PktLossNoUnknown>






- We can analyze in the context of a specific site or link. Example <http://tiny.cc/pSLink>




- This example shows measurements being made and captured by OSG <http://tiny.cc/pSDash>



Status of OSG Net Services(last)

← → ↻ https://perfonar-itb.grid.iu.edu/WLCGperSONAR/check_mk/index.py?start_url=%2FWLCGperSONAR%2Fcheck_mk%2Fview.py%3Fview_name%3Dagg ☆   

Check  RAW 1.2.6p16


Tactical Overview

| | | |
|----------|----------|-----------|
| Hosts | Problems | Unhandled |
| 285 | 34 | 34 |
| Services | Problems | Unhandled |
| 4439 | 960 | 960 |






Quicksearch

Views









- Overview
 - Host & Services Problems
 - Main Overview
 - Network Topology
- Hosts
- Host Groups
- Services
- Service Groups
 - Service Groups (Grid)
 - Service Groups (Summary)
 - Services by group
- Business Intelligence
 - All Aggregations
 - Hostname Aggregations
 - Problem Aggregations
 - Single-Host Aggregations
 - Single-Host Problems
- Problems
- Addons
- Search Graphs




All Aggregations 13 rows /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mkkee/CN=500323/CN=Shawn Mc Kee (admin) 09:21 

OSG Network ITB Servers

| Links | State | Tree | Hosts |
|---|---------|-----------------------|----------------|
|  | CRIT CR | ▶ Host cassandra-itb1 | cassandra-itb1 |
|  | OK OK | ▶ Host cassandra-itb2 | cassandra-itb2 |
|  | CRIT CR | ▶ Host perfonar-itb | perfonar-itb |
|  | WARN WA | ▶ Host psds-itb1 | psds-itb1 |
|  | CRIT CR | ▶ Host psds-itb2 | psds-itb2 |

OSG Production Network Services

| Links | State | Tree | Hosts |
|---|-------|-------------------|------------|
|  | OK OK | ▶ Host cassandra1 | cassandra1 |
|  | OK OK | ▶ Host cassandra2 | cassandra2 |
|  | OK OK | ▶ Host cassandra3 | cassandra3 |
|  | OK OK | ▶ Host perfonar1 | perfonar1 |
|  | OK OK | ▶ Host perfonar2 | perfonar2 |
|  | OK OK | ▶ Host psds0 | psds0 |
|  | OK OK | ▶ Host psds1 | psds1 |
|  | OK OK | ▶ Host psds2 | psds2 |

← → ↻ myosg.grid.iu.edu/rgstatushistory/index?downtime_attr_showpast=&account_type=cumulative_hours&ce_account_type=gip_vo&se_account_type=vo ☆   

MyOSG ▾ Home Resource Group ▾ Virtual Organization ▾ Status Map Misc ▾ Search OSG Login

RSV Status History Between Dec 5, 2016 and Jan 4, 2017

Perfonar components osg

- Cassandra 1
- Cassandra 2
- Cassandra 3
- perfonar1
- perfonar2
- psds0
- psds1
- psds2

Cassandra DB

Cassandra DB

Cassandra DB

perfonar data store

perfonar data store

perfonar data store

perfonar data store

perfonar data store

perfonar data store

Update Page

INFORMATION TO DISPLAY


RSV Status History ▾

Start Date:

30 Days Ago ▾

End Date:

Now ▾

 Open Science Grid

2/22/2017 Shawn McKee - OSG Networking

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Status of OSG Net Services

Check **MK** RAW 1.2.6p16

Secure | https://perfsonar-itb.grid.iu.edu/WLCGperfSONAR/check_mk/index.py?start_url=%2FWLCGperfSONAR%2Fcheck_mk%2Fview.py%3F

All Aggr... 14 rows /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mkcee/CN=500323/CN=Shawn Mc Kee (admin)

Hosts: 286 Problems: 34 Unhandled: 34
Services: 4471 Problems: 909 Unhandled: 909

Quicksearch: mesh

Views

- Overview
- Host & Services Problems
- Main Overview
- Network Topology
- Hosts
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- Service Groups (Grid)
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- Single-Host Aggregations
- Single-Host Problems
- Problems
- Addons
- Search Graphs
- Inventory
- CPU Related Inventory of all Hosts
- Software Package Search

OSG Network ITB Servers

| Links | State | Tree | Hosts |
|-------|-------|-----------------------------------|----------------------------|
| | OK | ▶ Host cassandra-itb1 | cassandra-itb1 |
| | OK | ▶ Host cassandra-itb2 | cassandra-itb2 |
| | OK | ▶ Host meshconfig-itb.grid.iu.edu | meshconfig-itb.grid.iu.edu |
| | OK | ▶ Host perfsonar-itb | perfsonar-itb |
| | OK | ▶ Host psds-itb1 | psds-itb1 |
| | OK | ▶ Host psds-itb2 | psds-itb2 |

OSG Production Network Services

| Links | State | Tree | Hosts |
|-------|-------|-------------------|------------|
| | OK | ▶ Host cassandra1 | cassandra1 |
| | OK | ▶ Host cassandra2 | cassandra2 |
| | OK | ▶ Host cassandra3 | cassandra3 |
| | OK | ▶ Host perfsonar1 | perfsonar1 |
| | OK | ▶ Host perfsonar2 | perfsonar2 |
| | OK | ▶ Host psds0 | psds0 |
| | OK | ▶ Host psds1 | psds1 |
| | OK | ▶ Host psds2 | psds2 |

myosg.grid.iu.edu/rgstatushistory/index?downtime_attr_showpast=&account_type=cumulative_hours&ce_account_type=gip_vo&se_account_type=vo_transfer_volume&bdiitree_type=total_jobs&bdi_object=service&bdi_serv

My OSG Home Resource Group Virtual Organization Status Map Misc Search OSG Login

RSV Status History Between Jan 23, 2017 and Feb 22, 2017

Config Changes

Update Page

INFORMATION TO DISPLAY

RSV Status History

Start Date: 30 Days Ago

End Date: Now

OAM of the specified date will be used for both start & end time of the graph.

RESOURCE GROUPS TO DISPLAY

Perfsonar components OSG

- Cassandra 1
- Cassandra 2
- Cassandra 3
- perfsonar1
- perfsonar2
- psds0
- psds1
- psds2

Perfsonar-itb components OSG-ITB

- Cassandra-itb1
- Cassandra-itb2

Graph showing RSV Status History for various components. A red arrow points to a specific event labeled "Config Changes" on Feb 03 2017 02:48:17 GMT-0500 (Eastern Standard Time).

Service “Challenges”







- As you can see on the previous 30 day RSV status we have had some occasional problems with some services
 - MaDDash mitigation with cron restart script from Scott working
 - New issues with publishing data to CERN ActiveMQ.
 - Two events where publishing stopped: around 10:25 PM on Saturday Feb 11 and Feb 18. Investigation pointed out some problems with lack of [needed log access](#)
 - See ongoing ticket <https://ticket.opensciencegrid.org/32653>
- Scott noted the Business Intelligence summary was indicating too many problems...should only go critical when a response is needed
 - Next few slides show remediation/configuration changes
- The ITB instances have had problems. Full /var, MaDDash up/down, intermittent load issues. Not critical because it's ITB. Mostly working
- Would still like to get check_mk monitoring on the virtualization hosts.
 - Useful to understand resource use and possible conflicts
 - Is opening a ticket the best way to get this?

Reconfiguring Business Intelligence













BI - Business Intelligence /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mckee/CN=500323/CN=Shawn Mc Kee (admin) 11:05 MK

[Main Menu](#)
[New Aggregation](#)
[New Rule](#)

Aggregations

| Actions | Nr. | Groups | Rule | Note |
|---|-----|---------------------------------|------|-------------------------|
|   | 1 | OSG Production Network Services | host | Called for all hosts... |
|    | 2 | Hosts | host | Called for all hosts... |
|   | 3 | OSG Network ITB Servers | host | Called for all hosts... |

Rules

| Actions | Lvl | ID | Parameters | Title | Aggregation | Nodes | Usages | Comment |
|---|-------|--------------|------------|--------------------|-------------|-------|--------|---------|
|   | False | host | HOST | Host \$HOST\$ | worst | 8 | 3 | |
|  | 1 | applications | HOST | Applications | worst | 1 | 1 | |
|  | 1 | filesystems | HOST | Disk & Filesystems | worst | 4 | 1 | |
|  | 1 | general | HOST | General State | worst | 3 | 1 | |
|  | 1 | hardware | HOST | Hardware | worst | 1 | 1 | |
|  | 1 | logfiles | HOST | Logfiles | worst | 1 | 1 | |
|  | 1 | networking | HOST | Networking | worst/1/2 | 1 | 1 | |
|  | 1 | other | HOST | Other | worst/1/0 | 1 | 1 | |
|  | 1 | performance | HOST | Performance | worst | 1 | 1 | |
|  | 2 | filesystem | HOST FS | \$FS\$ | worst | 3 | 1 | |
|  | 2 | checkmk | HOST | Check_MK | worst | 1 | 1 | |
|  | 2 | multipathing | HOST | Multipathing | worst | 1 | 1 | |

- The check_mk BI rolls-up the summary state of a number of groups of checks
- For OSG we track Production and ITB groups
- Within each group we summarize the state of each host

Reconfiguring Business Intelligence(2)

BI - Edit Aggregation /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mckee/CN=500323/CN=Shawn Mc Kee (admin) 11:06

▼ Aggregation Properties

Aggregation Groups List of groups in which to show this aggregation. Usually each aggregation is only in one group. Group names are arbitrary texts. At least one group is mandatory.

OSG Production Network S...

Rule to call Create nodes based on a host search ▼

Refer to: The found hosts themselves ▼

When selecting *The found hosts' childs*, the conditions (tags and host name) are used to match a host, but you will get one node created for each child of the matched host. The place holder \$1\$ contains the name of the found child.

When selecting *The found hosts' parents*, the conditions (tags and host name) are used to match a host, but you will get one node created for each of the parent hosts of the matched host. The place holder \$1\$ contains the name of the child host and \$2\$ the name of the parent host.

Host Tags:

Host Name: All Hosts ▼

Nodes to create: Call a Rule ▼

When calling a rule you can use the place holder \$1\$ in the rule arguments. It will be replaced by the actual host names found by the search - one host name for each rule call.

Rule: host - Host \$HOST\$ ▼

Arguments: \$1\$

Agent type: is ▼ Check_MK Agent (Server) ▼

Criticality: is ▼ Productive system ▼

Networking Segment: ignore ▼

Cassandra: ignore ▼

monitor via SNMP: ignore ▼

monitor via Check_MK Agent: is ▼ set

Disabled ☐ Currently disable this aggregation

Use Hard States Hard states can only differ from soft states if at least one host or service of the BI aggregate has more than 1 maximum check attempt. For example if you set the maximum check attempts of a service to 3 and the service is CRIT just since one check then it's soft state is CRIT, but its hard state is still OK.

☒ Base state computation on hard states

Optimization If you have a large number of aggregations that cover only one host and maybe its parents (such as Check_MK cluster hosts), then please enable this optimization. It reduces the time for the computation. Do **not** enable this for aggregations that contain data of more than one host!

☐ The aggregation covers data from only one host and its parents.

Reconfiguring Rules for Hard State

Maximum number of check attempts for service /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mckee/CN=500323/CN=Shawn Mc Kee (admin) 11:05

No Changes Main Menu Monitoring Configura... Used Rulesets

Main directory

The maximum number of failed checks until a service problem state will be considered as hard. Only hard state trigger notifications.

Rules in folder Main directory

| Order | Actions | Conditions | Value | Comment |
|---------|---------|--|-------|---|
| ↓ ↓ | ✎ 📄 📁 | ▪ Host has tag monitor via Check_MK Agent ▪ Service name is NFS mount /net/nas01/Public | 15 | Require 8 successive failures to set the hard state (8 minutes) |
| ↑ ↑ ↓ ↓ | ✎ 📄 📁 | ▪ Service name is proc_rsv | 10 | Require 10 successive results to change the hard state |
| ↑ ↑ ↓ ↓ | ✎ 📄 📁 | ▪ Service name is proc_simplevisor | 10 | Require 10 successive results to change the hard state |
| ↑ ↑ ↓ ↓ | ✎ 📄 📁 | ▪ Service name is proc_stompc1t | 10 | Require 10 successive states to change the hard state |
| ↑ ↑ | ✎ 📄 📁 | ▪ Host has tag monitor via Check_MK Agent ▪ Service name is proc_MaDDash | 15 | Require many successive measurements to change hard state |

Create rule in folder: Main directory ▼

- Some services have transitions or intermittent glitches we don't want to signal on.
- Check_mk supports both hard and soft service states.
 - Hard states only change after the soft state has changed and stayed changed for N measurements
- Set limits to match typical observed glitch-level

Timelines of psds0 Example

Secure | https://perfonar-itb.grid.iu.edu/WLCGperfSONAR/check_mk/index.py?start_url=%2FWLCGperfSONAR%2Fcheck_mk%2Fview.py%3Fview_name%3Daggr_single%26aggr_name%3DHost%2520psds0%2

Check **MK** RAW 1.2.6p16

Availability of Single Aggregation Host psds0 /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mckee/CN=500323/CN=Shawn Mc Kee (admin) 11:03

Hosts: 286 Problems: 34 Unhandled: 34
Services: 4471 Problems: 908 Unhandled: 908

Quicksearch: mesh

Views

The last 7 days

| | OK | WARN | CRIT | UNKNOWN | Downtime | N/A |
|------------|--------|-------|-------|---------|----------|-------|
| Host psds0 | 98.55% | 1.43% | 0.02% | 0.00% | 0.00% | 0.00% |
| Summary | 98.55% | 1.43% | 0.02% | 0.00% | 0.00% | 0.00% |

Timeline of Host psds0

2017-02-15 16:04:16 2017-02-22 16:04:16

| Links | From | Until | Duration | State | Last Known Plugin Output |
|-------|---------------------|---------------------|----------|-------|--------------------------|
| 🔍 | 2017-02-15 16:04:16 | 2017-02-16 03:35:59 | 6.86% | OK | |
| 🔍 | 2017-02-16 03:35:59 | 2017-02-16 03:37:00 | 0.01% | WARN | |
| 🔍 | 2017-02-16 03:37:00 | 2017-02-16 03:37:58 | 0.01% | OK | |
| 🔍 | 2017-02-16 03:37:58 | 2017-02-16 03:38:59 | 0.01% | WARN | |
| 🔍 | 2017-02-16 03:38:59 | 2017-02-16 06:23:10 | 1.63% | OK | |
| 🔍 | 2017-02-16 06:23:10 | 2017-02-16 06:41:10 | 0.18% | WARN | |
| 🔍 | 2017-02-16 06:41:10 | 2017-02-16 07:03:10 | 0.22% | OK | |
| 🔍 | 2017-02-16 07:03:10 | 2017-02-16 07:18:16 | 0.15% | WARN | |
| 🔍 | 2017-02-16 07:18:16 | 2017-02-16 10:23:14 | 1.83% | OK | |
| 🔍 | 2017-02-16 10:23:14 | 2017-02-16 10:24:16 | 0.01% | WARN | |
| 🔍 | 2017-02-16 10:24:16 | 2017-02-16 10:25:12 | 0.01% | OK | |
| 🔍 | 2017-02-16 10:25:12 | 2017-02-16 10:44:12 | 0.19% | WARN | |
| 🔍 | 2017-02-16 10:44:12 | 2017-02-16 11:10:13 | 0.26% | OK | |
| 🔍 | 2017-02-16 11:10:13 | 2017-02-16 11:26:15 | 0.16% | WARN | |
| 🔍 | 2017-02-16 11:26:15 | 2017-02-16 11:50:12 | 0.24% | OK | |
| 🔍 | 2017-02-16 11:50:12 | 2017-02-16 12:12:12 | 0.22% | WARN | |
| 🔍 | 2017-02-16 12:12:12 | 2017-02-16 12:35:12 | 0.23% | OK | |
| 🔍 | 2017-02-16 12:35:12 | 2017-02-16 12:38:13 | 0.03% | WARN | |
| 🔍 | 2017-02-16 12:38:13 | 2017-02-16 17:00:04 | 2.60% | OK | |
| 🔍 | 2017-02-16 17:00:04 | 2017-02-16 17:03:04 | 0.03% | WARN | |
| 🔍 | 2017-02-16 17:03:04 | 2017-02-18 06:45:47 | 22.45% | OK | |
| 🔍 | 2017-02-18 06:45:47 | 2017-02-18 06:46:47 | 0.01% | CRIT | |
| 🔍 | 2017-02-18 06:46:47 | 2017-02-19 03:45:04 | 12.48% | OK | |
| 🔍 | 2017-02-19 03:45:04 | 2017-02-19 03:58:03 | 0.13% | WARN | |
| 🔍 | 2017-02-19 03:58:03 | 2017-02-19 04:24:02 | 0.26% | OK | |

Overview
Host & Services Problems
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Problem Aggregations
Single-Host Aggregations
Single-Host Problems
Problems
Addons
Search Graphs
Inventory
CPU Related Inventory of all Hosts
Software Package Search
Other
Comments
Downtimes
History of scheduled downtimes
Host- and Service events
Host- and Service notifications
Search Global Logfile

Bookmarks

WATO - Configuration

Main Menu
Monitoring Agents
Hosts
Host Tags
Global Settings

Open Science Grid

Tracking Service History

- We can provide a “service history” view
- Useful to understand behavior in time
- **Need to iterate with Ops to track RSV status and tweak sensitivity**

The screenshot displays the CheckMK web interface. The top navigation bar shows the URL: https://perfsolar-itb.grid.iu.edu/WLCGperfSONAR/check_mk/index.py?start_url=%2FWLCGperfSONAR%2Fcheck_mk%2Fview.py%3Fhost%3Dpsds0%26view_name%3Dhostsvcevents. The interface includes a sidebar with navigation links such as Overview, Hosts, Services, and Problems. The main content area is titled "Events of host & services psds0" and displays a table of service alerts.

Events of host & services psds0

120 rows / DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=mckee/CN=500323/CN=Shawn Mc Kee (admin) 11:37

Wednesday, 2017-02-22

| Time | Event | Host | Service | Type | Check output |
|--------|---------------|-------|-----------------------------|------|--|
| 76 sec | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | OK - 21.0% used (4070.9 of 19381.6 GB) |
| 2 min | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | CRIT - Stale fs handle |
| 54 min | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | OK - 21.0% used (4070.8 of 19381.6 GB) |
| 55 min | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | CRIT - Stale fs handle |
| 95 min | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | OK - 21.0% used (4070.8 of 19381.6 GB) |
| 96 min | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | CRIT - Stale fs handle |
| 2 hrs | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | OK - 21.0% used (4071.1 of 19381.6 GB) |
| 2 hrs | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | CRIT - Stale fs handle |

Tuesday, 2017-02-21

| Time | Event | Host | Service | Type | Check output |
|--------|---------------|-------|---------------|------|--|
| 25 hrs | SERVICE ALERT | psds0 | proc_stompcit | SOFT | OK - 1 processes 202.5 MB virtual, 22.5 MB resident, 0.0% CPU (15 min average: 6.7%) |
| 25 hrs | SERVICE ALERT | psds0 | proc_stompcit | SOFT | CRIT - 0 processes (ok from 1 to 2) CRIT |

Monday, 2017-02-20

| Time | Event | Host | Service | Type | Check output |
|---------------------|---------------|-------|-----------------------------|------|---|
| 2017-02-20 12:57:32 | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | OK - 21.0% used (4064.3 of 19381.6 GB) |
| 2017-02-20 12:56:38 | SERVICE ALERT | psds0 | NFS mount /net/nas01/Public | SOFT | CRIT - Stale fs handle |
| 2017-02-20 05:18:26 | SERVICE ALERT | psds0 | proc_rsv | SOFT | OK - 644 processes 50520.8 MB virtual, 7343.6 MB resident, 8.4% CPU |

perfSONAR v4.0 / MaDDash 2.0

- The perfSONAR v4.0 release was delayed from the nominal Dec 1 2016 date
 - Needed an RC3 release to follow-up on more issues found in RC2...still not out yet ☹
 - **Targeting ~March, 2017 for RC3**
 - **Release in April?!?**
- MaDDash 2.0 is close to ready.
- Once these are released we will want to update ITB and then Production
 - Will need a global campaign to get sites updated
 - Details on upcoming OSG “upgrades” on next slide

Supporting ALL perfSONAR Metrics

- When we initial setup the perfSONAR RSV probes and ActiveMQ message queue at CERN we only supported part of all the possible data metrics perfSONAR can measure.
 - Both the RSV probes and Stompctl/ActiveMQ systems need to support all possible perfSONAR metric types
 - Required changes to the RSV probes and ActiveMQ configurations
- Since the last report on January 4th this work has been successfully completed and in ITB.
 - Edgar enabled support and corresponding configuration options in the software. New perfSONAR RSV out.
 - **Thanks to Edgar, OSG Operations and the CERN AMQ team!**

Needed Updates

- Once perfSONAR v4.0 and MaDDash v2.0 are released we will need to do some updates:
 - MaDDash 2.0 to [perfsonar-itb](#), then [psmad](#)
 - Deploy MCA to [production](#) (currently on [meshconfig-itb](#) => [meshconfig.grid.iu.edu](#))
 - **Replace existing OIM version and cut-over** (DNS alias), e.g., <https://myosg.grid.iu.edu/pfmesh/mine/hostname/> to refer to <http://meshconfig.grid.iu.edu/pub/auto/>
 - Update check_mk agents to use 1.2.8p17 (all OSG service hosts)
 - Update check_mk server to use 1.2.8p17
 - perfSONAR RSV to production
<https://ticket.opensciencegrid.org/31257>
 - **Updates to Esmond (Cassandra/Postgresql)?**

Status: Plan to Address Storage Space

- Discussed in detail last time including hardware upgrade plan
- The long term solution for data life-cycle mgmt depends upon the choice of measurement archive (MA), the creation of suitable tools for that MA and identification of long-term storage
 - Won't happen in time for OSG needs
- The near-term plan is to buy ~8 disks and incrementally swap them for smaller disks, minimizing downtime.
 - Rob Quick can summarize current status

Talks and Papers (Outreach)

- There are at least 5 CHEP 2016 **submitted** referencing OSG Networking
 - *The OSG Network Service*
 - *Scaling the PuNDIT project for wide area deployments*
 - *Networks in ATLAS*
 - *Networking – the view from HEP (Plenary)*
 - *Big Data Analytics Tools as Applied to ATLAS Event Data*
- January 10th was the Pre-GDB on Networking at CERN
 - OSG's role in gathering network metrics and alerting and alarming are central items for near-term work
- The 2017 ICFA-SCIC Network Monitoring report was submitted <http://icfa-scic.web.cern.ch/ICFA-SCIC/meetings.html>
- Upcoming presentation on Networking
 - OSG AHM March 8
 - ATLAS Software and Computing week March 13-17th

Concerns (Much as last time)

- Operation of services
 - OSG production network service still seeing issues
 - Monitoring was significantly tweaked to be less noisy
 - **MaDDash v1 has had issues. Maybe v2 will fix things?**
 - Challenging to identify root cause/fixes with indirect access
 - Significant set of updates coming in 30-45 days...need to prep
- Identifying suitable non-WLCG sites to benefit from OSG networking services (need ~5 sites identified to recruit)
 - In limbo because we want new release, new meshconfig and some level of alarming available to use to recruit with
- Long-term data lifecycle management
 - **Must implement additional storage**
- Convergence ongoing on “alarming” system.
 - Needed components are in place and being played with
 - Need to harden this and move to broader testing
 - Build the user-facing interface and verify continuous operation

Questions or Comments?

Thanks!

URLs of Relevance

- OSG Network Datastore Documents
 - Operations https://docs.google.com/document/d/11144BS0-88M0cLMMjKcKMIE-Q5s2IX-w3IYl-0Pn_08/edit#
 - SLA <https://twiki.grid.iu.edu/bin/view/Operations/PSServiceLevelAgreement>
 - Data lifecycle https://docs.google.com/document/d/1mj1kf43nZf6gvKoNtiTOc0g0MYDv_wSfSm7YdiMs3Lo/edit#
- Current OSG network documentation <https://www.opensciencegrid.org/bin/view/Documentation/NetworkingInOSG>
- OSG networking year-5 goals and milestones: <https://docs.google.com/document/d/1FzmXZinO4Pb8NAfd5SWUzaAFYOL23dt66hQsDmaP-VW/edit>
- perfSONAR adoption tracking: http://grid-monitoring.cern.ch/perfsonar_coverage.txt
- Deployment documentation for both OSG and WLCG hosted in OSG (migrated from CERN) <https://twiki.opensciencegrid.org/bin/view/Documentation/DeployperfSONAR>
- ATLAS Analytics:
 - Packet-loss: <http://tiny.cc/PktLossNoUnknown> (6 month view)
 - perfSONAR dashboard: <http://tiny.cc/pSDash>
 - perfSONAR link details: <http://tiny.cc/pSLink>
- Mesh-config in OSG <https://oim.grid.iu.edu/oim/meshconfig>
- Pre-Production Meshconfig <https://meshconfig-itb.grid.iu.edu/meshconfig/>
- MadAlert: <http://madalert.aglt2.org/madalert/diff.html>
- perfSONAR homepage: <http://www.perfsonar.net/>