

# RSV: OSG Grid Fabric Monitoring and Interoperation with WLCG Monitoring Systems

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Computing in High Energy and Nuclear Physics  
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Open Science Grid



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3/26/09

- Goals of the RSV Project
- Local Structure and Initial Deployment
- Central Collection and WLCG SAM Interoperability
- Data Presentation
- Next Steps

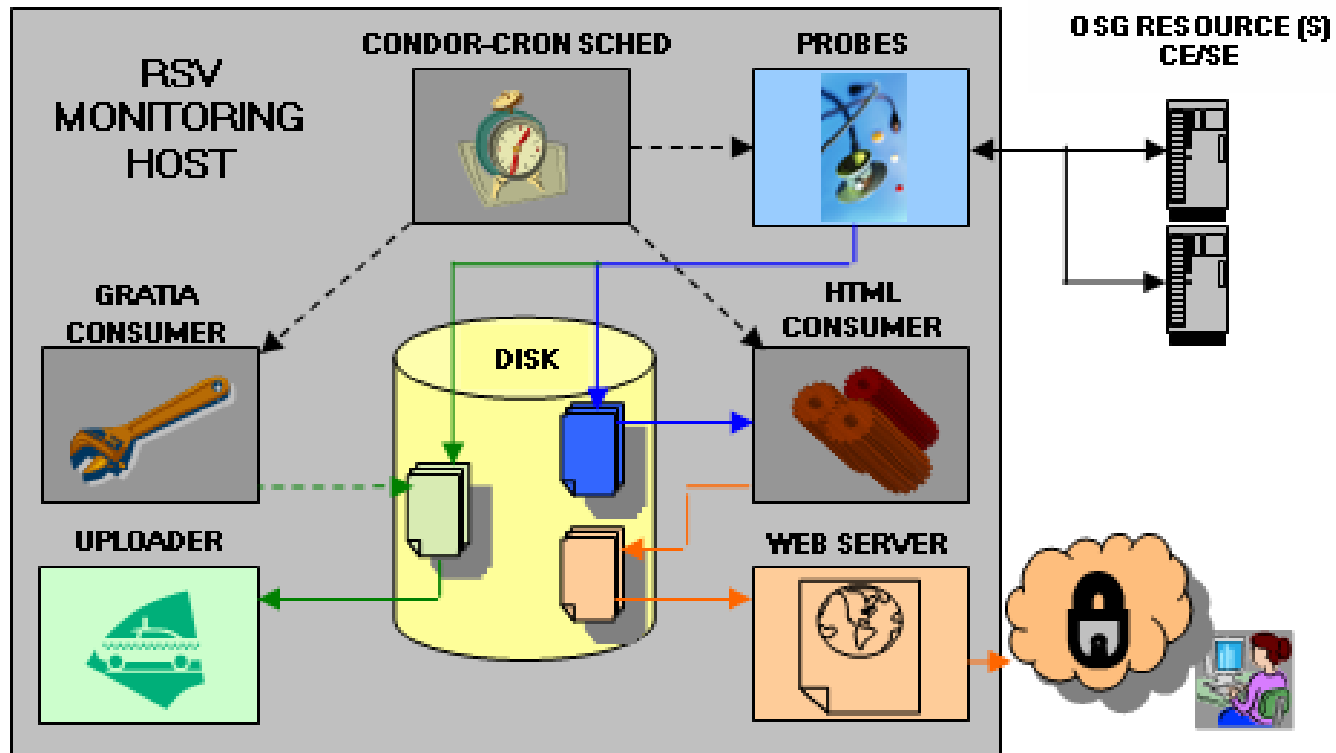
**What we'll be covering...**

- Put the monitoring into the hands of the local resource administrator
- Make simple and flexible probe structure
- Provide independent schedule and collection infrastructure (decoupled from the probe)
- Provide data to WLCG for Availability and Reliability calculations

## Initial Goals of RSV

- Interact with local fabric monitoring
- Recruit 'experts' to create probes
- Make a flexible central display of collected data
- Improve WLCG transport reliability

**Goals as RSV Matured**



# RSV Client

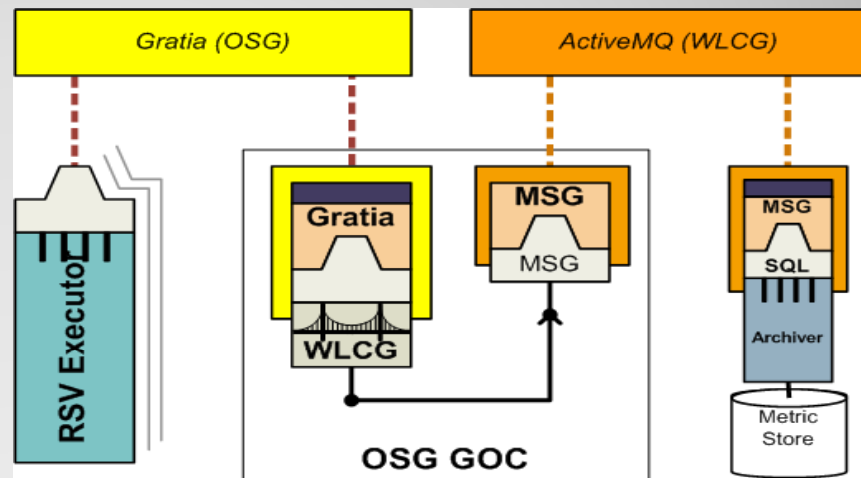
- Quick adoption by ATLAS and CMS
  - Due to WLCG Availability and Reliability
- General OSG adoption outside of LCG related resources is still slow
- Currently 106 of 131 Services Reporting RSV Status to Central Collector
- Initial version had some reliability issues and was difficult to configure
  - These have been addressed in RSV V2 or are being addressed in RSV V3

## Deployment

- Uses Gratia for transport and collection of probe results
  - Mechanisms that holds records until they can be transmitted protecting from outages on either side
  - Collection Database
- OSG Information Management DB
  - Determines which records are from valid OSG resources
  - Determines which OSG sites should publish to WLCG (Changes left to the admin)

## Central Collection

- Probe output based on specification set forth by Grid Monitoring Working Group
  - Joint project by EGEE and OSG
- Uses Nagios Critical/Warning/Unknown/OK
  - Allows use in existing fabric monitoring
- Transmitted via ActiveMQ to WLCG



## WLCG SAM Interoperability

Pic: James Casey



## Detailed SAM Test Results

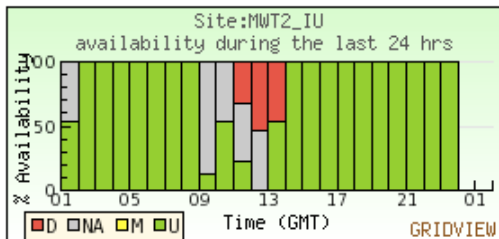
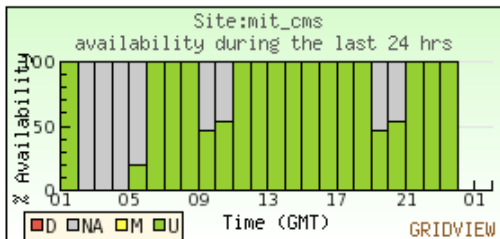
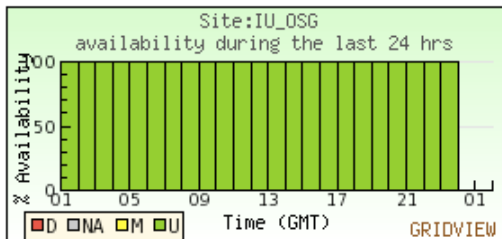
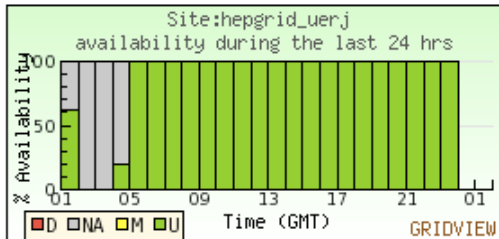
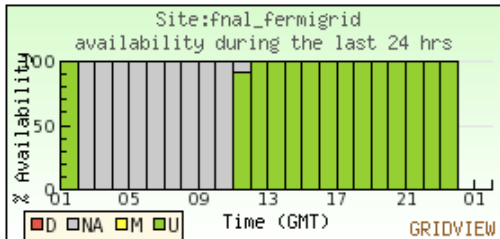
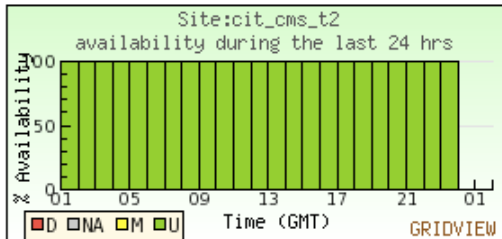
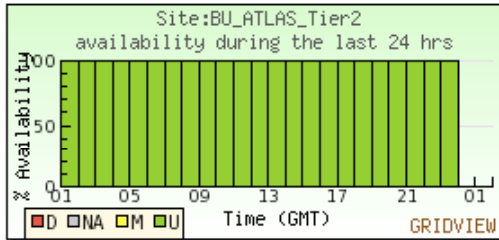
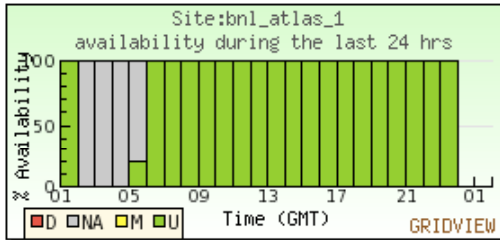
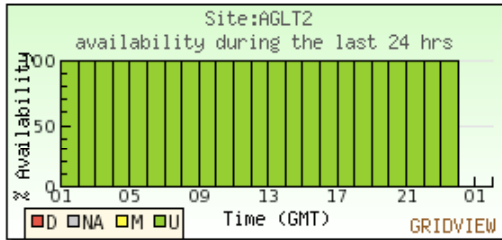
Site : AGLT2 Node : gate01.aglt2.org Service : OSGCE  
Test Name: OSGCE-org.osg.batch.jobmanager-default-status Test VO: OPS Test Help : ?  
Critical : N Criticality Defining VO: OPS

Timestamp	Status ID	Status Info	Test Env	Result Summary	Detail Result
at 01:38:01 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 02:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 03:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 04:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 05:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 06:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 07:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 08:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 09:38:01 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 10:38:00 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>
at 11:38:01 on 25/03/2009	10	ok	<a href="#">Test Env</a>	OK	<a href="#">Detail Result</a>

# RSV Status in SAM

## Tier-2 Site Availability VO:OPS (Current Status)

(Click on the Graph below to see Availability of Individual Services at the Site)



# OSG Status to GridView

- Everybody gets so much information all day long that they lose their common sense.

--Gertrude Stein (1874 – 1946)

- Now that we have all this useful information, it would be nice to do something with it. (Actually, it can be emotionally fulfilling just to get the information. This is usually only true, however, if you have the social life of a kumquat.)

--Unix Programmer's Manual

## Data Presentation

- Consolidate data sources in OSG
- Replace VORS monitoring
- Provide data in ways that are useful to the users
- Do not make another “dashboard”
- Allow users to integrate the information into their normal daily workflow

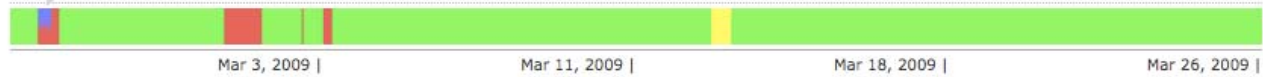
## Goals of MyOSG Presentation

## RSV Status History

Between Feb 24, 2009 and Mar 26, 2009

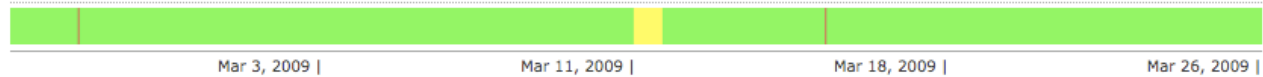
### AGLT2

Con Tue, 24 Feb 2009 21:19:48 GMT

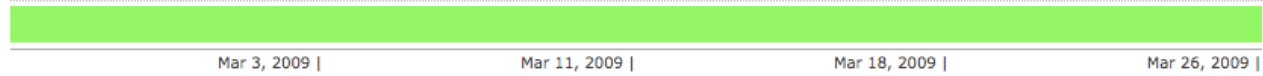


### BU\_ATLAS\_Tier2

Compute Element



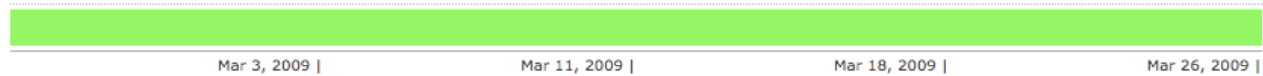
SRM V2 Storage Element



Bestman-Xrootd Storage Element



GridFtp Storage Element



### BNL\_ATLAS\_1

Compute Element



# MyOSG Status History

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**AGLT2**  
**Compute Element**

Mar 3, 2009 | Mar 11, 2009 | Mar 18, 2009 | Mar 26, 2009 |

Possible compromise of GUMS server host system...under investigation. (From Jan 1, 1970 00:33:29 UTC to Jan 1, 1970 00:33:29 UTC)  
 Internal Status :CRITICAL  
 Internal Status Detail:1 of 5 critical metrics are in CRITICAL status. 7223704=OK 7223975=OK 7224189=CRITICAL 7223973=OK 7223411=OK

**Critical Metrics**

- CACert Expiry** Reported at Feb 24, 2009 19:48:01 UTC  
 Checks if the resource's CA certificate is valid.  
[Show Detail](#)
- OSG Directory Permissions** Reported at Feb 24, 2009 20:05:01 UTC  
 Checks if permissions are set correctly on important user-accessible OSG directories.  
[Show Detail](#)
- OSG Version** Reported at Feb 24, 2009 20:21:01 UTC  
 Determines the installed OSG version.  
[Show Detail](#)
- Ping** Reported at Feb 24, 2009 20:27:01 UTC  
 Check if resource responds to pings.  
[Show Detail](#)
- GRAM Authentication** Reported at Feb 24, 2009 19:31:01 UTC  
 Checks if available proxy for the resource is valid and not about to expire.  
[Show Detail](#)

# Drilldown on Issue

## Availability History

Between Feb 24, 2009 00:00:00 UTC and Mar 26, 2009 00:00:00 UTC

AGLT2

Compute Element



BU\_ATLAS\_Tier2

Compute Element



SRM V2 Storage Element



# MyOSG Availability Graphs

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iGoogle™

Google Search I'm Feeling Lucky

Advanced Search  
Search Preferences  
Language Tools

Get artist themes | Change theme from Barea Dark w... | Add stuff »

Resource Summary

GROUP GRASE-CSE-MAGIC

GRASE-CSE-MAGIC

RSV Status

✘ 1 of 1 services are in CRITICAL status.  
Status Detail Status History

GROUP LIGO\_UWM\_NEMO

LIGO\_UWM\_NEMO

RSV Status

✘ 1 of 1 services are in CRITICAL status.  
Status Detail Status History

share

powered by netvibes

Google Calendar

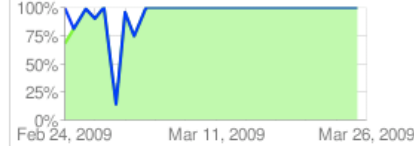
« March 2009 »  
S M T W T F S

Availability History

Between Feb 24, 2009 00:00:00 UTC and Mar 26, 2009 00:00:00 UTC

AGLT2

Compute Element

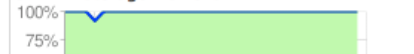


BU\_ATLAS\_Tier2

Compute Element



SRM V2 Storage Element



Weather

Indianapolis, IN



56°F

Current: Mostly Cloudy  
Wind: SW at 2 mph  
Humidity: 27%

Wed



61° | 43°

Thu



61° | 43°

Fri



61° | 41°

Sat



58° | 36°

Prague



35°F

Current: Light Rain  
Wind: S at 2 mph  
Humidity: 91%

Thu



42° | 37°

Fri



48° | 37°

Sat



50° | 35°

Sun



44° | 32°

MyOSG UWA Used with iGoogle

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Tools & technology (116) OSG ATLAS MWT2 Edit +

Current Status Share Edit x

- ✓ MWT2\_IU (iut2-grid6.iu.edu)  
No issues found for this resource.  
**Compute Element Service Status**
  - ✓ No issues found for this service.  
7965295=OK 7965730=OK  
7965679=OK 7964990=OK  
7964981=OK
    - ✓ Reported 42 minutes ago
  - ✓ CACert Expiry
  - ✓ OSG Reported 16 minutes ago
  - ✓ Directory Permissions
  - ✓ OSG Reported 21 minutes ago
  - ✓ Version
  - ✓ Ping Reported 55 minutes ago
  - ✓ GRAM Reported 57 minutes ago
  - ✓ Authentication
- ✓ MWT2\_IU\_SE (iut2-dc1.iu.edu)  
No issues found for this resource.  
**SRM V2 Storage Element Service Status**

## MyOSG UWA used with Netvibes

- Allows creation of your own view of OSG Status data and integrate it with your other web/desktop/dashboard mechanisms
- Netvibes, Google Personalized Homepage, Windows Vista, Apple Dashboard, Opera, iPhone (Other mobile devices)
- If you don't use one of the above a simple XML format is available also

**MyOSG - Universal Widget API**

- More probes / re-write some probes
  - Security Probes
  - Infrastructure Probes (VOMS, GUMS, BDII)
- Complete VORS replacement
- Improve stability
- Configuration / restarting
- Unified Management Console
- Robot certificates
  
- Project Plan

**RSV Phase III**

**Questions?**

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