



OSG Resource and Service Validation and WLCG SAM Interoperability

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Schedule

- History of Status Monitoring in the OSG
- Resource and Service Validation
- WLCG SAM Transport
- Moving Forward



History of Status Monitoring

- GridCat
 - Simple Status Tests
 - Authentication
 - Hello World
 - Job Manager
 - GridFTP
 - Red/Grid Light for Quick OSG Health Check
 - Some Attempt to Determine Free Slots
 - Poor Documentation and Support
 - OSG-centric



Wed Mar 30 14:59:13 GMT 2005

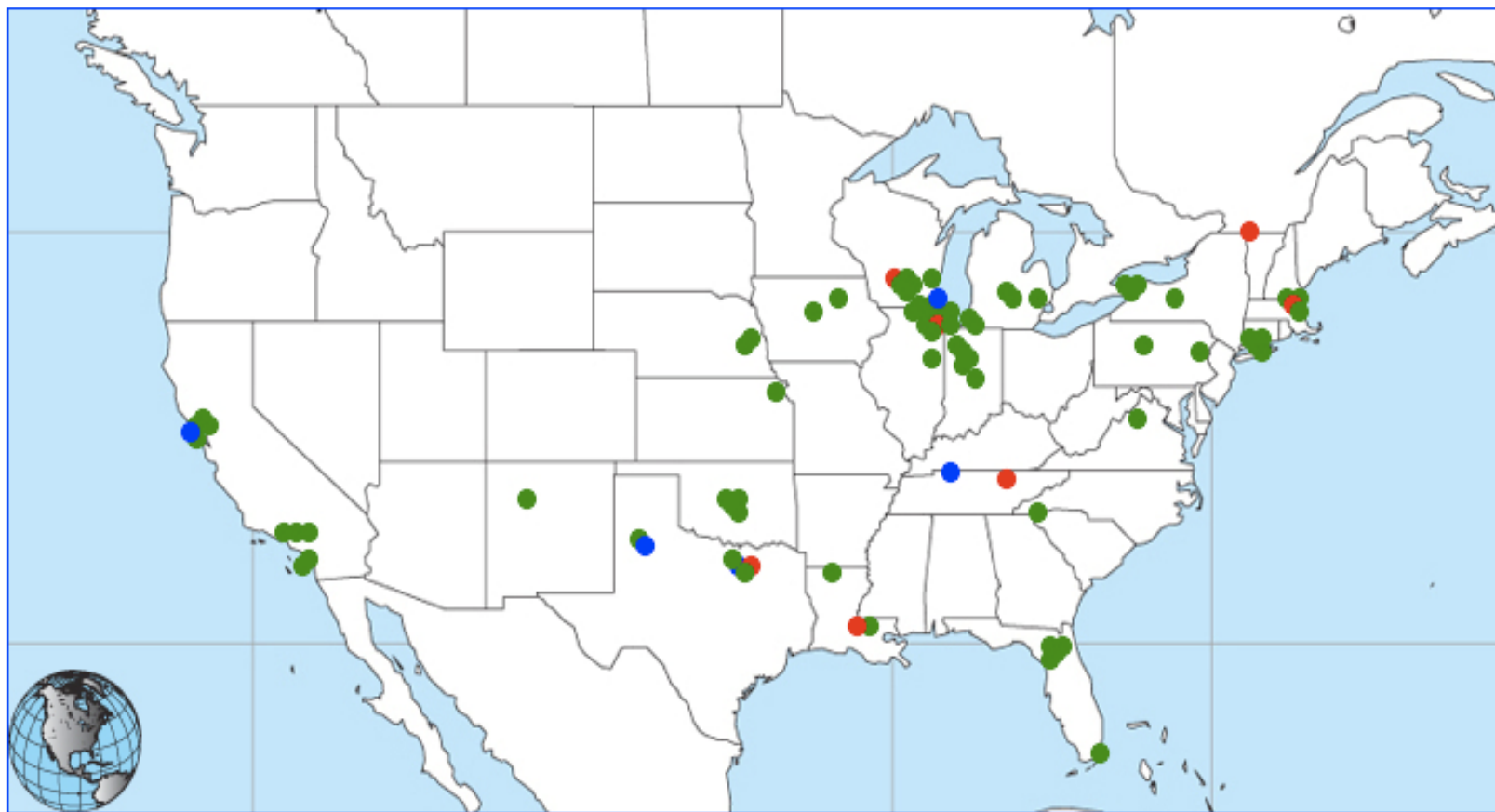


History of Status Monitoring

- Virtual Organization Resource Selector (VORS)
 - More Complex Test Set
 - Attempts to Determine VOs Supported
 - Not by running tests as VO but by checking configuration files
 - Attempts to Integrate OSG, OSG-ITB, TeraGrid, and EGEE Resource Information
 - Integrates BDII Glue Data for Resources
 - VO Specific Information
 - Poor Documentation
 - Un-expandable Backend/DB Design
 - Status Testing Limited to OSG



VORS



- Legend:
- Resource is currently up
 - Resource is currently down
 - Resource is under maintenance or on peering grid



Resource and Service

Validation Project Philosophy

- Simple **Independent** Status Probes
- **Local**, Central, and Group Collectors and Display Tools
- **Standardized** WLCG Monitoring Output
- Easily Tailored to Add New **Resource or VO Specific** Probes
- **Reuse** Other OSG Components
 - Operations Group is primarily writing code for **probes** and some core infrastructure configuration; not to scheduling or collecting elements

Open Science Grid

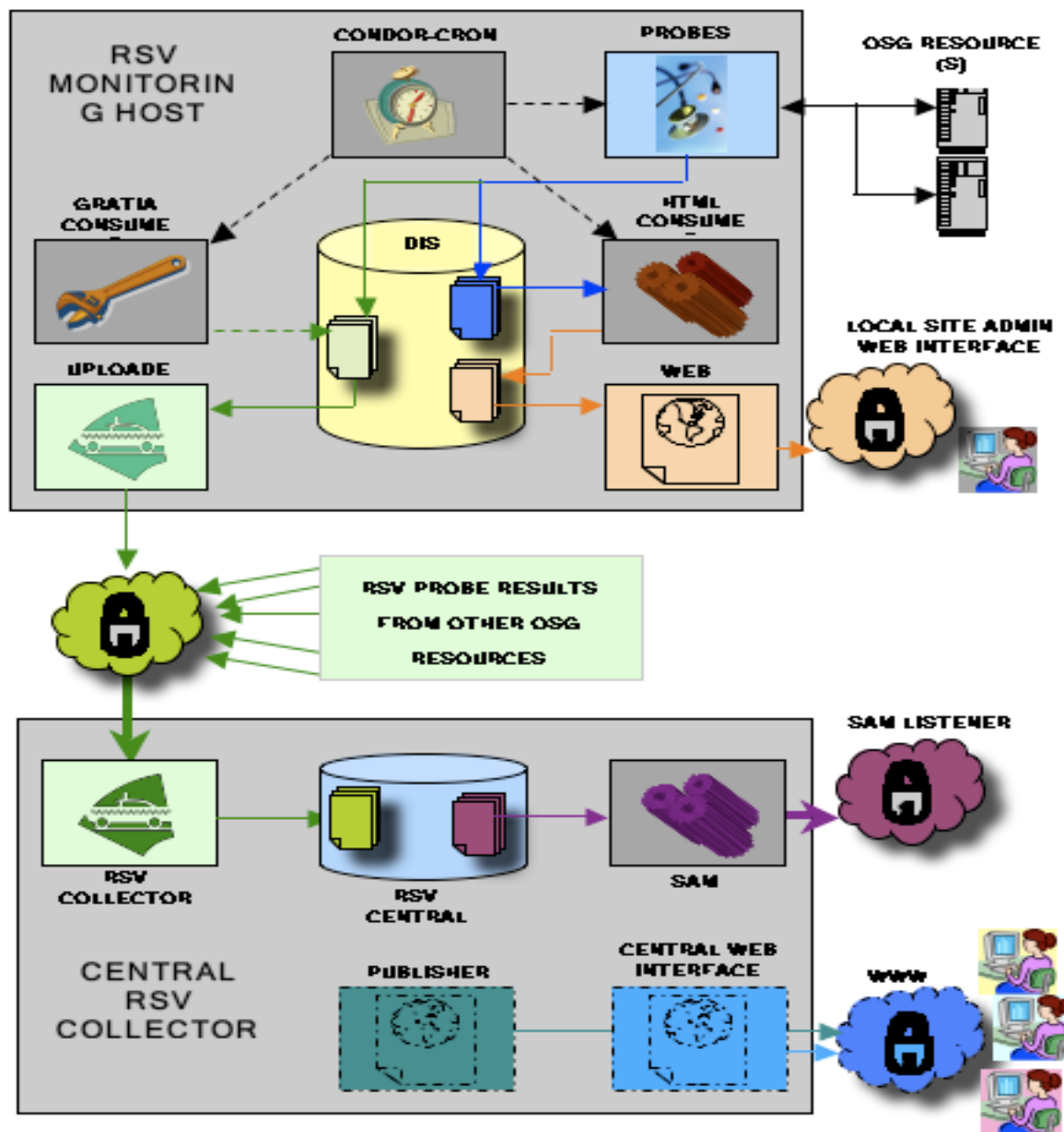


Fig 1: Schematic of RSV. (Future work shown in dotted-dashed.)



RSV Local Display



Open Science Grid

OSG RSV Status - Main
01-05-2008 06:58:06

[Archived HTML pages](#)

nest.phys.uwm.edu

Probe	Metric	Last Executed	Status
gridftp-simple-probe	org.osg.globus.gridftp-simple	2008-01-03 10:08:03 CST	OK
jobmanagers-status-probe	org.osg.batch.jobmanager-fork-status	2008-01-04 06:21:31 CST	OK
osg-version-probe	org.osg.general.osg-version	2008-01-04 06:21:11 CST	OK
cacert-crl-expiry-probe	org.osg.certificates.crl-expiry	2008-01-03 08:31:21 CST	OK
gram-authentication-probe	org.osg.globus.gram-authentication	2008-01-03 11:31:02 CST	OK
classad-valid-probe	org.osg.general.classad-valid	2008-01-03 08:46:01 CST	OK
jobmanagers-status-probe	org.osg.batch.jobmanager-condor-status	2008-01-03 08:44:26 CST	OK
osg-directories-probe	org.osg.general.osg-directories-CE-permissions	2008-01-03 10:07:08 CST	OK
certificate-expiry-local-probe	org.osg.local.httptcert-expiry	2008-01-03 06:06:00 CST	OK
certificate-expiry-local-probe	org.osg.local.containercert-expiry	2008-01-03 06:29:00 CST	OK
certificate-expiry-local-probe	org.osg.local.hostcert-expiry	2008-01-03 06:43:00 CST	OK
cacert-expiry-local-probe	org.osg.local.cacerts-expiry	2008-01-05 06:58:04 CST	OK
jobmanagers-available-probe	org.osg.batch.jobmanagers-available	2008-01-03 06:59:11 CST	OK
cacert-crl-expiry-probe	org.osg.certificates.cacert-expiry	2008-01-03 07:48:21 CST	OK

- HTML output that is easily viewable by administrators
- Drilldown for details of failures



WLCG Grid Monitoring Working Group (Concluded)

- Scope
 - Working group was focused on the data relevant to improving the understanding and reliability of the grid services.
 - Did not cover local fabric monitoring, but did look at integrating local fabric monitoring tools to use grid service monitoring.
 - Not concerned about monitoring from the application point of view.
- Goals
 - Agree on common definitions for sensors and metrics that describe the current state of a grid service.
 - Describe the interface between a site and the grid monitoring fabric, in order to allow sites within different grid infrastructures to publish and consume the monitoring data.
 - Complete list at <https://twiki.cern.ch/twiki/bin/view/LCG/GridServiceMonitoringWGMandate>



Grid Monitoring Working Group Specs

- Specifications for Probes
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GridMonitoringProbeSpecification>
- Specifications for Data Exchange
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GridMonitoringDataExchangeStandard>
- Specifications for Tools Interfaces (Draft)
 - <https://twiki.cern.ch/twiki/bin/view/LCG/GridMonitoringToolsInterfaceSpecs>



OSG Status Publishing in Resource Level Nagios

Current Network Status
 Last Updated: Fri Feb 29 15:16:47 EST 2008
 Updated every 90 seconds
 Nagios® - www.nagios.org
 Logged in as sarah

[View History For This Host](#)
[View Notifications For This Host](#)
[View Service Status Detail For All Hosts](#)

Host Status Totals

Up	Down	Unreachable	Pending
1	0	0	0
All Problems		All Types	
0		1	

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
17	0	2	1	0
All Problems		All Types		
3		20		

Service Status Details For Host 'iut2-grid2'

Host ↑↓	Service ↑↓	Status ↑↓	Last Check ↑↓	Duration ↑↓	Attempt ↑↓	Status Information
iut2-grid2	LOCALDISKUSAGE	OK	02-29-2008 15:13:32	57d 23h 5m 15s	1/3	OK: 1 mountpoints are ok.
	NFS	OK	02-29-2008 15:13:43	380d 23h 39m 46s	1/3	OK: RPC program nfs version 2 version 3 version 4 udp running
	PING	OK	02-29-2008 15:15:52	514d 1h 29m 21s	1/3	PING OK - Packet loss = 0%, RTA = 0.04 ms
	RAIDMEGACTRL	OK	02-29-2008 15:11:47	87d 5h 0m 22s	1/3	OK - 2 active drives
	SSH	OK	02-29-2008 15:13:28	468d 22h 3m 38s	1/3	SSH OK - OpenSSH_4.3p2-1.9_test5.cern-hpn (protocol 2.0)
	org.osg.batch.jobmanager-ondor-status	OK	02-29-2008 14:20:16	6d 22h 49m 34s	1/3	A test job was successfully submitted to "iut2-grid6.iu.edu/jobmanager-ondor", its status when last checked was a valid one ("PENDING"); and finally the test job was successfully cleaned up!EOT
	org.osg.batch.jobmanager-fork-status	OK	02-29-2008 14:34:46	9d 0h 24m 1s	1/3	A test job was successfully submitted to "iut2-grid6.iu.edu/jobmanager-fork", its status when last checked was a valid one ("ACTIVE"); and finally the test job was successfully cleaned up!EOT
	org.osg.batch.jobmanager-loadleveler-status	UNKNOWN	02-29-2008 14:33:13	6d 22h 49m 33s	3/3	Job manager "iut2-grid6.iu.edu/jobmanager-loadleveler" appears to be not supported by the CE being probed. Bailing now...EOT
	org.osg.batch.jobmanager-lsf-status	UNKNOWN	02-29-2008 14:47:29	9d 0h 11m 2s	3/3	Job manager "iut2-grid6.iu.edu/jobmanager-lsf" appears to be not supported by the CE being probed. Bailing now...EOT
	org.osg.batch.jobmanager-managedfork-status	OK	02-29-2008 14:30:53	6d 22h 49m 33s	1/3	A test job was successfully submitted to "iut2-grid6.iu.edu/jobmanager-managedfork", its status when last checked was a valid one ("PENDING"); and finally the test job was successfully cleaned up!EOT
	org.osg.batch.jobmanager-pbs-status	OK	02-29-2008 14:58:07	6d 22h 49m 33s	1/3	A test job was successfully submitted to "iut2-grid6.iu.edu/jobmanager-pbs", its status when last checked was a valid one ("ACTIVE"); and finally the test job was successfully cleaned up!EOT
	org.osg.batch.jobmanagers-available	OK	02-29-2008 14:59:10	4d 0h 11m 24s	1/3	Available Batch Schedulers are condor.pm fork.pm managedfork.pm pbs.pmEOT
	org.osg.certificates.cacert-expiry	OK	02-29-2008 14:11:47	6d 22h 49m 35s	1/3	87 CA certs found: all valid for at least 168 hours!EOT



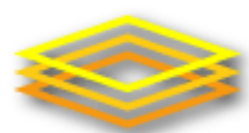
OSG Status Publishing in WLCG SAM

- Still in testing phase
- Transport is working
- Publishing and Availability Statistics are still be worked out
- Sample:

SAM Test Results for site UCSDT2

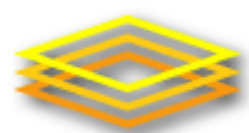
Test Criticality Defining VO : OPS
(Click on the Test Result Graph to View Details)

Service	Node	Test Name	Test VO	Test Help	Critical	Test Results						
						na	ok	info	notwarn	error	crit	maint
OSGCE	osg-gw-2.t2.ucsd.edu	Service Status										
		OSGCE-org.osg.certificates.crl-expiry	UNREGD VO's	?	Y							
		OSGCE-org.osg.general.osg-directories-CE-permissions	UNREGD VO's	?	Y							
		OSGCE-org.osg.general.osg-version	UNREGD VO's	?	Y							
		OSGCE-org.osg.globus.gridftp-simple	UNREGD VO's	?	Y							



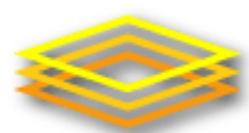
Future Goals

- With OSG 1.0.0 (May 2008)
 - Additional Probes
 - SE Probes, IGTF and VDT Versions, GUMS and VOMS, VO Supported, Others
 - Streamlined Configuration and Proxy Handling
 - Increased Integration with WLCG SAM
 - Publication of OSG Centralized Collector data
 - Integration with OSG Information Management DB
 - Nagios Wrapper for Resources
- Beyond 1.0.0
 - Increase Probe Contribution from VO, Service, and Application Developers
 - Continued Development of Publishing Methods



Questions

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- RSV and Nagios: Sarah Williams - saewill@iupui.edu
- Grid Monitoring Working Group: James Casey - James.Casey@cern.ch, Ian Neilson - Ian.Neilson@cern.ch, Rob Quick - rquick@iu.edu



Thank You

- All Members of the Grid Monitoring Working Group.
- All Members of the OSG Operations Center
- MidWest ATLAS Tier2
- Doug Olson