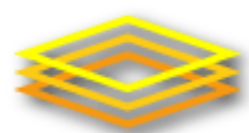


OSG Resource and Service Validation and WLCG SAM Interoperability

Rob Quick

With Content from Arvind Gopu, James Casey,
Ian Neilson, and Sarah Williams
Presented by D. Olson, LBNL
10 April 2008, ISGC, Taipei



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

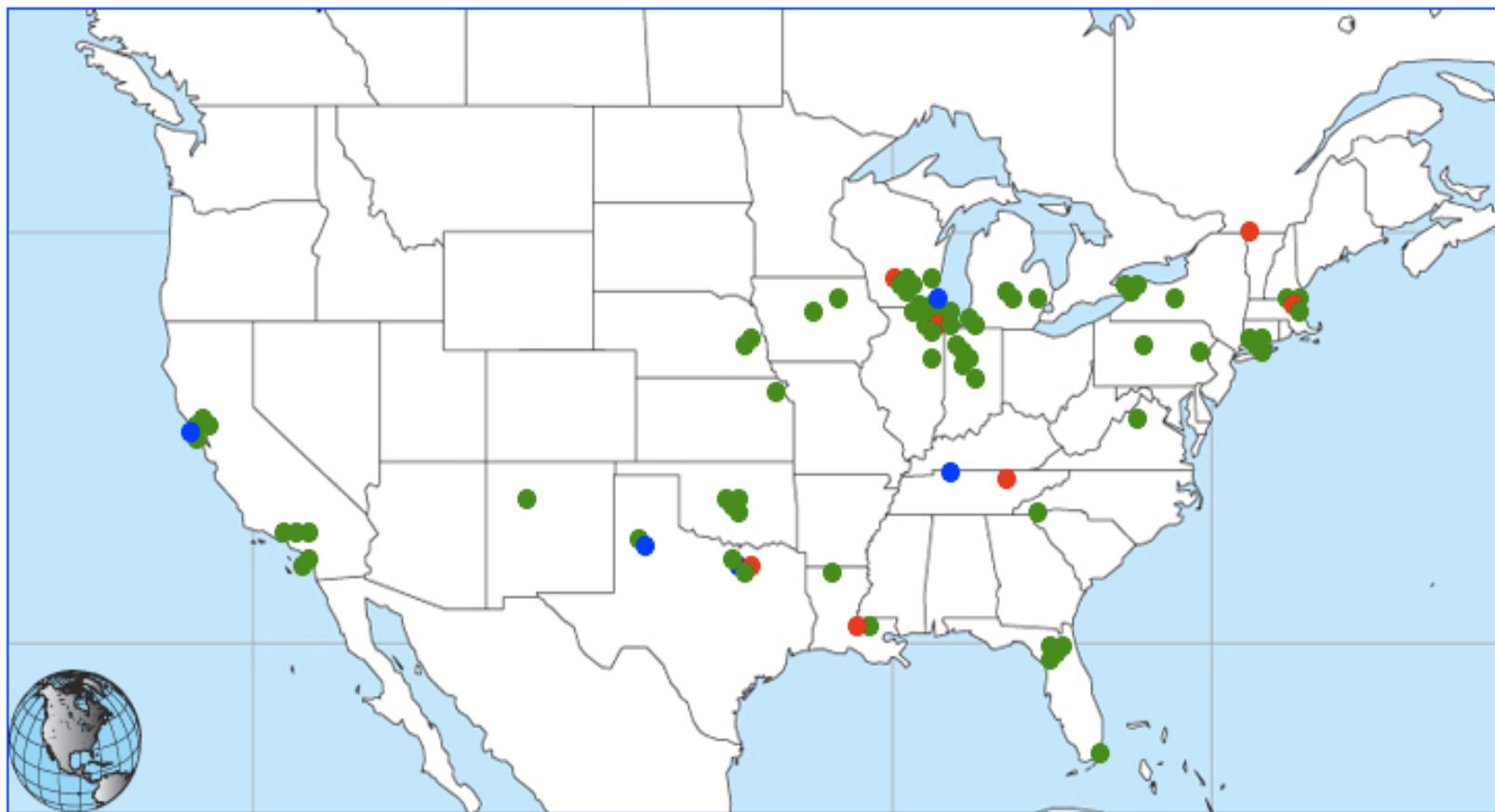


History of Status Monitoring

- 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

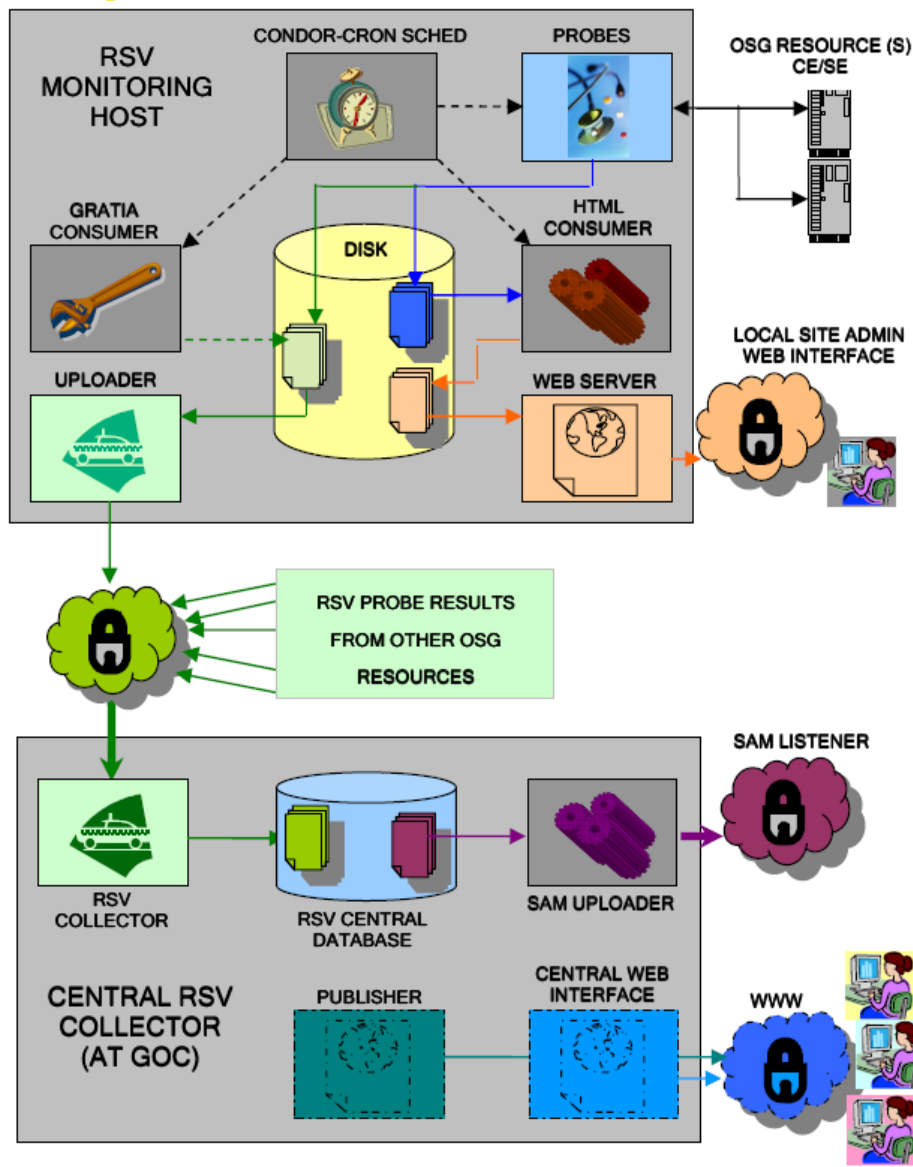


Resource and Service

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



Schematic of RSV
(Proposed Phase II work shown in dotted-dashed line).



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.httpcert-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-condor-status	OK	02-29-2008 14:20:16	6d 22h 49m 34s	1/3	A test job was successfully submitted to "iut2-grid8.iu.edu/jobmanager-condor", 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-grid8.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-grid8.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-grid8.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-grid8.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-grid8.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



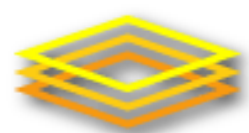
OSG Status Publishing in WLCG SAM

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

SAM Test Results for site UCSDT2

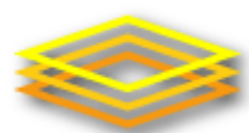
Test Criticality Defining VO : OPS
(Click on the Test Result Graph to View Details)

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							



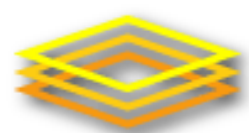
Future Goals

- 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