
MyOSG: A user-centric information resource for OSG infrastructure data sources

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Outline

- Quick introduction to OSG
 - Explain roles assumed by members
- Objectives of MyOSG
- Technical design
- User interface
 - Demo (if Internet connection is available!)
- Questions

Open Science Grid

- Researchers – usually geographically distributed – from several scientific domains form Virtual Organizations (VOs) that:
 - Contribute hardware and software resources
 - **Own** hardware; **allow** one or more VOs to **use** hardware
 - Develop tools useful to members of the OSG
- *Hard* for OSG community – users, support staff, site administrators – to *keep up w/ tools & accessibility*
- OSG trying to expand to other sciences
 - GOC noticed new collaborators/VOs repeatedly complain
 - Most tools on OSG are hard to discover
 - After discovering a tool, the interface is not uniform; Requires one to learn new interface **and** its data format

Tools/Services in OSG

- As with most Grid Computing projects
 - Status Monitoring (VORS, RSV, Nagios)
 - Accounting Information (Gratia)
 - Queue statistics, etc. (GIP+BDII/ReSS, others)
 - Topology + Human associations (OIM, others)
 - . . . Tons of others . . .
- Separate interfaces via web/ldap/command line

MyOSG addresses these issues

- Highly customizable web portal
 - Allows vastly different categories of users to
 - Access information *important* to their role
 - Retrieve information in *format convenient* to them
 - Use authoritative source for OSG topology (OIM), auth/auth
 - Organize data from different tools around topology to create a web portal
- Main design goals
 - Provide ability for users to export / subscribe to a variety of information in formats such as XML, UWA – an industry standard widget format, iCal – for calendar type information, etc.
 - Enable user to construct Individual Information Centers (IIC)
 - Netvibes, iGoogle, mobile devices (iPhone, etc.)

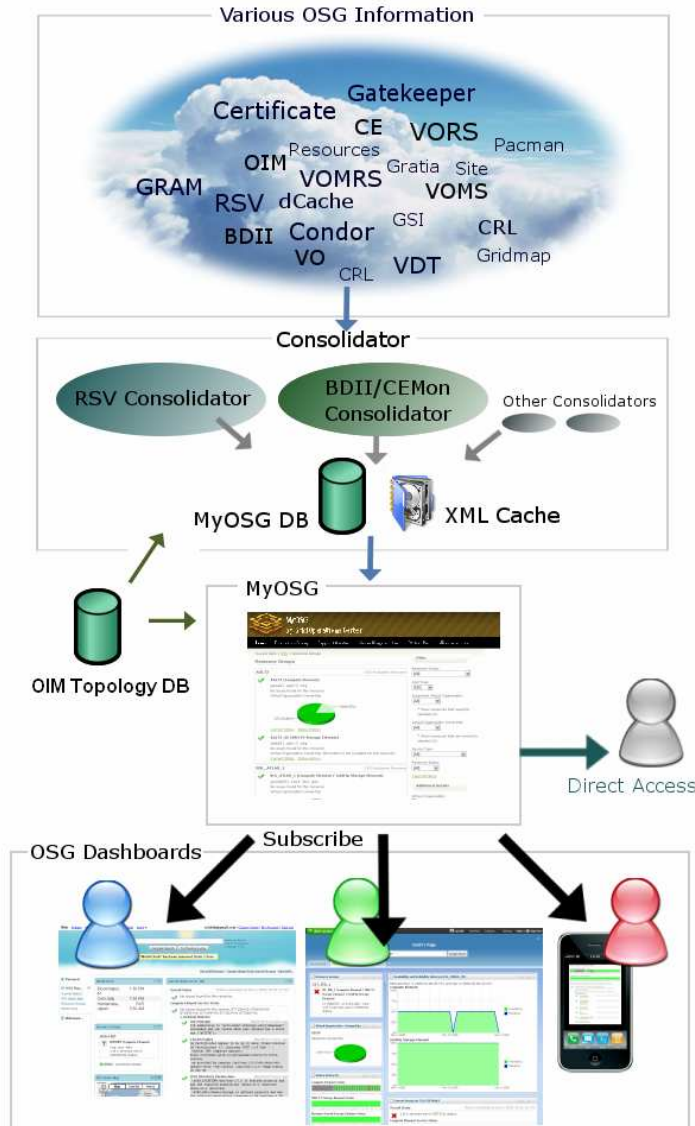
OSG Members and Roles

- End user – VO researcher
- VO Manager
- Support
 - Resource administrator
 - Support Center
 - Central operations group like GOC
- Management
- Integration Test Bed (ITB), Security, etc.

... OSG Members and Roles

- Often, one person assumes multiple roles
 - Each role demands different types of information
- For example ...
 - End users: resources positive service status, free CPUs, programmatic data
 - VO manager: Usage information and list of resources with negative status for resources they own
 - GOC: list of ALL resources with negative status, other monitoring information
 - Management: Usage information for all resources, contact information, other statistical information

MyOSG Framework – schematic



MyOSG Framework: Components

- Web Interface
 - PHP + Zend framework
 - Typical MVC (Model, View, Control) setup
 - Very light weight MVC – designed so it is easy to add (sub) components
 - jQuery for user-side JavaScripting
- Consolidators
 - RSVProcess (Monitoring)
 - Java. Normalizes incoming RSV status data, computes status, availability metrics, stores in DB
 - GIP Validation (Monitoring)
 - Summarizes XML status output
 - Gratia (Accounting)
 - Interfaces with another summarizing service developed by CMS VO

... MyOSG Framework: Components

- Backbone: OIM
 - Topology
 - Contacts
 - Downtime information
 - Simple yet powerful x509 cert based auth/auth
 - Certificate from accepted CA authenticates user
 - Role + action matrix provides authorization
- Data: MySQL database, files on disk
- Redundant Server, VM based installation

MyOSG User Interface

- <http://myosg.grid.iu.edu>
- Customizable UI – for each top menu item:
 - Select - Information to display
 - Use - Data selector based on entity in context
 - Use - Filters
- Most information rich menu item: Resource Group (See OIM topology presentation to learn why!)
- Current data formats: UWA (Netvibes, iGoogle), HTML for Mobile devices, XML, CSV, HTML via permalinks

MyOSG User Interface

- Demo (if Internet connection available!)
 - ❑ MyOSG Homepage: <http://myosg.grid.iu.edu>
 - ❑ Netvibes example (Arvind's public page):
<http://www.netvibes.com/arvindgopu>
 - ❑ iPhone?
 - ❑ Google Wave?

MyOSG Screenshots – Home page

MyOSG
by Grid Operations Center

Home Resource Group Support Center Virtual Organization Status Map Miscellaneous

About MyOSG

MyOSG is designed with the primary goal of providing users, administrators, VO managers, and everyone else, a one-stop location for various pieces of OSG related information.

MyOSG allows users to quickly select and filter information they are looking for. Most pages also allow the users to export the selected/filtered data in their preferred format HTML, Netvibes, Google, etc. and XML for programmatic interfaces.

Quick Links

- Resource Summary**
Current status summary from all production OSG resources ([ITB Resource Summary](#)).
- Current RSV Status**
Current RSV-based status for all production resources ([Current RSV Status for ITB resources](#)).
- Gratia Accounting**
Gratia Accounting based CPU usage information grouped by username for the last 30 days for all production resources ([Gratia Accounting graph for ITB resources](#)).
- RSV Status History**
Last 7 days worth of RSV-based status history for all production resources. You can click on any point (in time) on the graph to display the metric details at that time instant ([ITB RSV Status History](#)).
- GIP Validation Results**
Current GIP validation status for all production resources that provide the CE service ([GIP validation results for ITB resources](#)).
- Status Map**
"Status Map" shows the current overall site status on a Google Maps based world map ([Status Map for ITB sites](#)).

User Contributed MyOSG Views

Following are the user contributed MyOSG Views from a [TWiki Page](#). Anyone with Twiki access can edit these links.

- ATLAS Tier Twos**
List of Production ATLAS Tier 2 Resources by Rob Quick (August 13, 2009)
- CMS Tier Twos**
List of Production CMS Tier2 Resources by Rob Quick (August 13, 2009)

Use Cases

The use-cases below are provided to give users an idea of how they could potentially use MyOSG.

USER FROM A VO
Let us say, you are a CDF (VO) user who wants to run jobs on the OSG. You probably want a list of production resources that provide a CE and an SRM, support your VO, and are up at the moment; And you want environment variables on those resources. This page will likely help you get that information. If you care about the validity of GIP information, then you will need to do is add an additional filter requiring GIP validation status of OK. Once you have the information you are looking for, click the XML link to get the same information in a machine-readable XML format.

SITE ADMIN
Let us say, you are the admin of three resources: AGLT2, BNL_ATLAS_2, BNL_ATLAS_2, and you want to follow the health of your resources at one central location. This page will likely help you; and you can subscribe to the feed on your Netvibes home page using the Netvibes subscription link!

External Links

- OSG Information Management System**
OSG Information Management System (OIM) manages various aspects of OSG information. This is where OSG users can register their contact information or OSG admin to register their resources, virtual organization, etc.
- GOC Operations News and Announcement**
This page shows the latest public GOC news and announcements. You can also subscribe to our [GOC News RSS Feed](#)
- OSG TWiki**
This twiki is the home for OSG's collaborative work. Work in OSG is done in "Activities", coordinated through this TWiki, regularly scheduled phone conferences, and mailing lists. All of these communication modes are open to new members. The collaborative work area comprises separate "webs" for each of the activities, for documentation, and for other "hands-on" topics.
- OSG Software Cache**
This software cache provides OSG-specific components like VO package, GUMS template, etc. that are not provided by the VDT software distribution. The GOC also maintains a [OSG Yum Repository](#) that provides components like the OSG CA Certificates.

Contact GOC

If you need assistance or report a problem, please open a ticket at [GOC Ticket Submission Form](#)

Report bugs and feature requests at [GOC Bug Tracker](#)

MyOSG Screenshots – Resource Group

Information to display

(Please Select)

- (Please Select)
- Resource Group Summary
- Current RSV Status
- Current GIP Validation Status
- RSV Status History
- Availability History
- Availability Metrics
- Downtime Schedule
- Gratia Accounting

↓

Information to display

Resource Group Summary

- Show basic information about resou

For Resource Group

- Show Description
- Show Current GIP Validation Status
- Show OIM Hierarchy

For Resource

- Show WLCG Information
- Show Services
- Show Current RSV Status
- Show FQDN / Aliases
- Show Supported VOs
- Show VO Ownership
- Show Environment Parameters
- Show Contact Information

↓

Resource Groups to display

Select resource groups that you want to display above information (conditions are or-e)

- All Resource Groups
- Resource Groups in Facility ?
- Resource Groups in Sites ?
- Specific Resource Groups ?
- Supported by Support Centers ?

Filter

Only show resource groups that matches following criteria (conditions are and-ed).

For Resource Group

- Grid Type
 - OSG
 - OSG-ITB
- Current GIP Status

For Resource

- Current RSV Status
 - OK
 - WARNING
 - CRITICAL
 - UNKNOWN
 - DOWNTIME
- Provides following Services
 - BestmanXrootd
 - CE
 - GridFtp
 - SRMv1
 - SRMv2
 - Submit Node
- Allows following VO to access
 - CMS
- Owned by VOs
- RSV Monitoring Status is available
- Active Status
- Disable (Removed) Status
- At least one WLCG interop. flag is True

Update Page

MyOSG Screenshots – RG Summary & XML equivalent

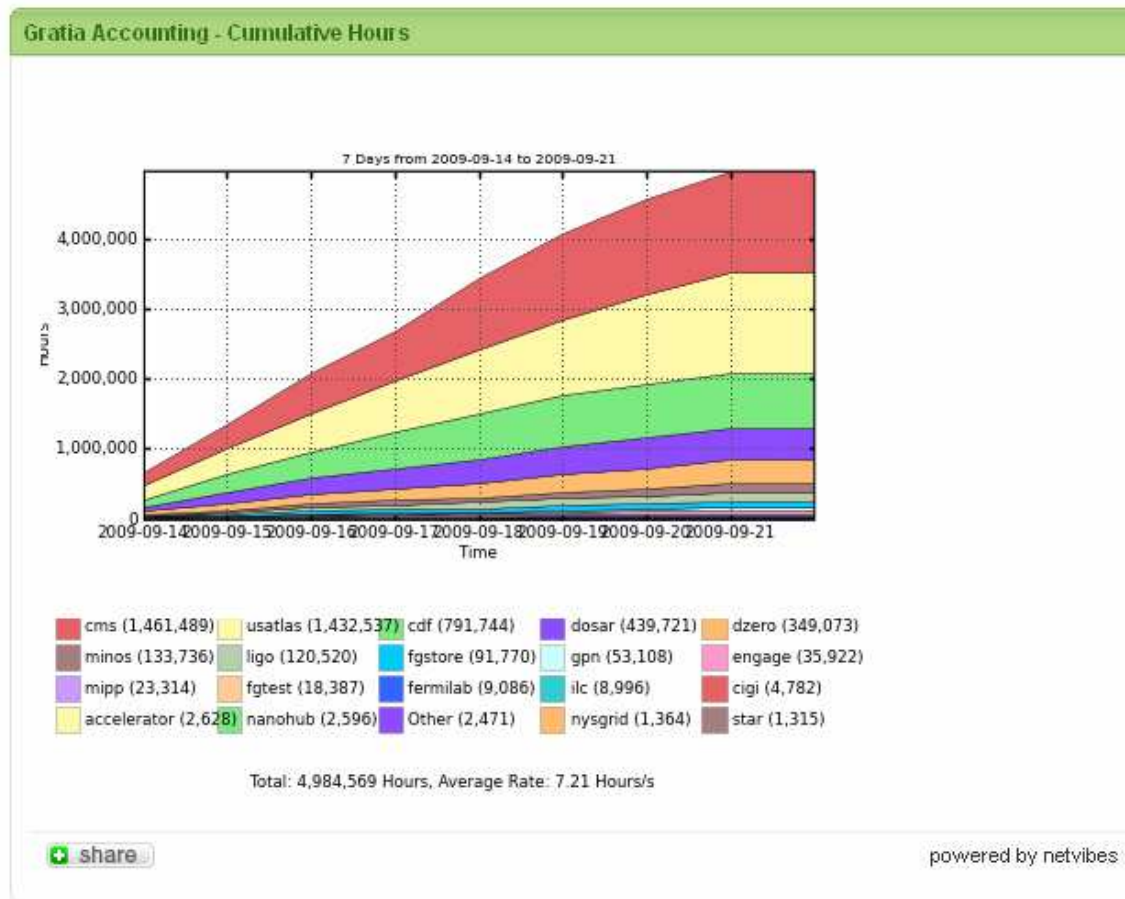
Resource Group Summary	
Brookhaven National Laboratory (Facility) > Brookhaven ATLAS Tier1 (Site) > BNL-ATLAS	
OSG Production Resource Group	
BNL-ATLAS_1	
Services	Compute Element
	Service URI: gridgk01.racf.bnl.gov:2119
	Hidden: False
	GridFtp Storage Element
Service URI: gridgk01.racf.bnl.gov:2811	
Hidden: False	
FQDN: gridgk01.racf.bnl.gov	
FQDN Alias: (No Alias)	
Environment Parameters	GLOBUS_LOCATION: /opt/OSG-1.0.0/globus
	OSG_APP: /usatlas/OSG/
	OSG_DATA: /usatlas/prodjob/share/

```
- <ResourceSummary>
- <ResourceGroup>
  <GridType>OSG Production Resource</GridType>
  <GroupID>235</GroupID>
  <GroupName>BNL-ATLAS</GroupName>
- <Facility>
  <Name>Brookhaven National Laboratory</Name>
</Facility>
- <Site>
  <Name>Brookhaven ATLAS Tier1</Name>
</Site>
- <Resources>
- <Resource>
  <ID>3</ID>
  <Name>BNL-ATLAS_1</Name>
  <Active>True</Active>
  <Disable>False</Disable>
- <Services>
- <Service>
  <ID>1</ID>
  <Name>CE</Name>
  <Description>Compute Element</Description>
  <ServiceUri>gridgk01.racf.bnl.gov:2119</ServiceUri>
  <HiddenService>False</HiddenService>
</Service>
```

MyOSG Screenshots – RG Status Map

The screenshot displays the 'RSV Status Map' interface. At the top, a navigation bar includes links for Home, Resource Group, Support Center, Virtual Organization, Status Map, and Miscellaneous. Below the navigation bar, the page title 'RSV Status Map' is followed by a 'Select Site:' dropdown menu set to 'LONI_LSU'. The main area is a map of the United States with various colored markers (green, red, blue) indicating resource status. A popup window for 'LONI_LSU' is open, showing two resource groups: 'LONI_OSG1' with a green checkmark and the text 'No issues found for this resource.', and 'LONI_OSG2' with a blue triangle icon and the text 'This resource is currently under maintenance.'. To the right of the map, there are control panels. The 'Sites to display' panel includes a note about URL updates and an 'Update Page' button. The 'RSV Status Map' panel has checkboxes for 'All Sites', 'Sites in Facility', and 'Sites supported by Support Centers'. The 'Filter' panel includes a note about search criteria and checkboxes for 'Has resource Group with grid type of' (OSG, OSG-ITB), 'Active Status' (Active, Inactive), and 'Disable (Removed) Status'. Another 'Update Page' button is at the bottom right.

MyOSG Screenshots – Usage Information



MyOSG Screenshots – Netvibes (Arvind)

The screenshot displays the Netvibes dashboard for Arvind, titled "Arvind's Netvibes Home". The dashboard is organized into three main sections:

- Resource Group Summary:** This section lists various resources with their RSV Status. All resources shown have a status of "No issues found for this resource."
 - GOC_BDI_1:** RSV Status: No issues found for this resource.
 - GOC_BDI_2:** RSV Status: No issues found for this resource.
 - RSV_Collector:** RSV Status: No issues found for this resource.
 - MyOSG_1:** RSV Status: No issues found for this resource.
 - MyOSG_2:** RSV Status: No issues found for this resource.
- RSV Status History:** This section shows the historical status of resources from Nov 13, 2009, to Nov 20, 2009.
 - GOC_BDI_1:** Shows two bars: "BDII server used by the OSG" and "BDII server queried by the top level WLCG BDII".
 - GOC_BDI_2:** Shows two bars: "BDII server used by the OSG" and "BDII server queried by the top level WLCG BDII".
 - GOC_RSV_Collector:** Shows one bar: "RSV Collector".
 - MyOSG:** Shows two bars: "MyOSG_1" and "MyOSG_2".
- Availability Metrics:** This section provides a table of availability and reliability metrics for various resources between Oct 21, 2009 00:00:00 UTC and Nov 20, 2009 17:22:49 UTC.

Resource	Service	Availability	Reliability
GOC_BDI			
GOC_BDI_1	OSG BDI	99.89%	99.89%
GOC_BDI_2	WLCG Interoperability BDI	99.89%	99.89%
GOC_BDI_2	OSG BDI	99.32%	99.84%
GOC_BDI_2	WLCG Interoperability BDI	99.32%	99.84%
GOC_RSV_Collector			
RSV_Collector	RSV Collector	99.68%	99.68%
MyOSG			
MyOSG_1	MyOSG	99.89%	99.89%
MyOSG_2	MyOSG	100%	100%

The dashboard footer includes navigation links for "About Netvibes", "Explore", "Business", "Platform", and "Help", along with a copyright notice for Netvibes © 2009 and social media links.

2009-11-20

OSG OSG workshop (SC09), Portland, OR

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MyOSG Screenshots – Netvibes (Admin)

The screenshot displays the Netvibes Admin interface for 'Arvind's Netvibes Home'. The main content area is divided into several widgets:

- Resource Group Summary:** Lists resources under 'Fermi National Accelerator Laboratory (Facility) > FNAL USCMS Tier1 (Site) > USCMS-FNAL-WC1'. It shows GIP Validation status (At least one test is failing), RSV Status (No issues found), and Supported VOs for various resource elements (CE1-CE4, SE).
- Current GIP Validation Status:** Shows 'USCMS-FNAL-WC1' with a red warning icon. Tests performed 14 minutes ago: 'Validate_GIP_BDII' (failing), 'Missing_Sites' (passing), and 'Interop_Reporting_Check' (passing).
- Current RSV Status:** A red bar indicating a status issue.
- RSV Status History:** A table showing RSV status for various resource elements (CE1-CE4, SE) between Oct 21, 2009 and Nov 20, 2009. Each row shows 'Compute Element' and 'GridFtp Storage Element' with green bars indicating status over time.
- Gratia Accounting - Cumulative Hours:** A stacked area chart showing cumulative hours from 2009-11-13 to 2009-11-20. The total is 485,030 hours with an average rate of 0.70 hours/s. The legend includes: cms (295,522), dzero (93,096), engage (80,191), fgstore (13,147), glow (376.30), usatlas (67.52), nanohub (38.90), sbgrid (14.24), geant4 (0.40), nebiogrid (0.02), and itc (0.00).

The footer contains navigation links for About Netvibes, Explore, Business, Platform, and Help, along with copyright information for Netvibes © 2009.

MyOSG Screenshots – Google Wave (Not released yet)

The screenshot displays a Google Wave interface for MyOSG. On the left, a sidebar contains navigation elements: 'Trash', 'SEARCHES' with a plus icon, and 'FOLDERS' with a plus icon. The main content area shows a message from 'me:' with a profile picture. The message content is structured as follows:

- Path: Indiana University (Facility) > IU UITS (Site) > GOC_BDII
- Resource: GOC_BDII_1
- RSV Status: ✔ No issues found for this resource. [Status Detail](#) [Status History](#)
- Resource: GOC_BDII_2
- RSV Status: ✔ No issues found for this resource. [Status Detail](#) [Status History](#)
- Path: Indiana University (Facility) > IU UITS (Site) > GOC_RSV_Collector

MyEGEE

- EGEE has adopted MyOSG as their future monitoring portal
 - Similar yet different (enough) topology: GOC-DB
 - Have prototyped it successfully
 - [Short YouTube video](#) EGEE made about MyEGEE

Future Work

- Main goal: Make user driven additions/updates
- GIP/BDII (CPU/storage availability)
 - Data, graphs, treemaps, etc. (Show [LDIF data!](#))
- VOMS monitoring (to replace existing broken voms-monitor)
- More support via videos, presentations, prezis, etc.
- Continue work with EGEE on MyEGEE
- Provide even simpler interface with user option to enable advanced options
- Other
 - Even more advanced authorization based on VOMS
 - High Availability

Q & A

- Questions?!
- . . .
- Have you heard of DivRep framework?
 - <http://divrep.com/node/1>
 - Designed and developed by GOC staff member Soichi Hayashi with input from us; used by OIM
 - Feel free to inquire about this!