

Open Science Grid

The OSG and Grid Operations Center

Rob Quick

Open Science Grid Operations
Center - Indiana University

ATLAS Tier 2-Tier 3 Meeting

Bloomington, Indiana - 20 June 2007



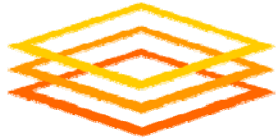
Outline

- The OSG and The GOC
- Client Installation (Tim Silvers)
- CE Installation
- GOC Services (John Rosheck)
- Wrap



Open Science Grid

- Distributed computing infrastructure for large-scale scientific research.
- Petascale computing and storage resources in uniform grid computing environment.
- Researchers from astrophysics, bioinformatics, computer science, medical imaging, nanotechnology and physics.
- Production and Integration Grids
- ~90 sites in the US, Asia, South America
- OSG partners, include campus, regional, national and international grids.



Open Science Grid

Open Science Grid



Virtual
Organization
Resource
Selector

Grids

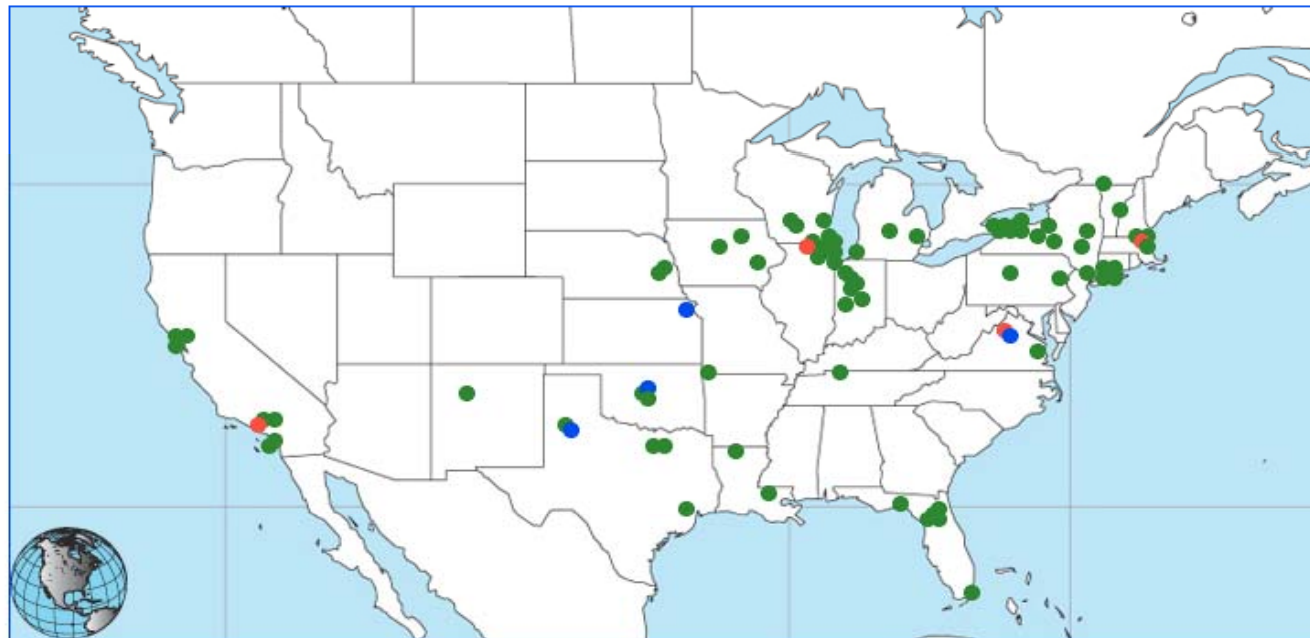
OSG

Virtual Organizations

All



Open Science Grid



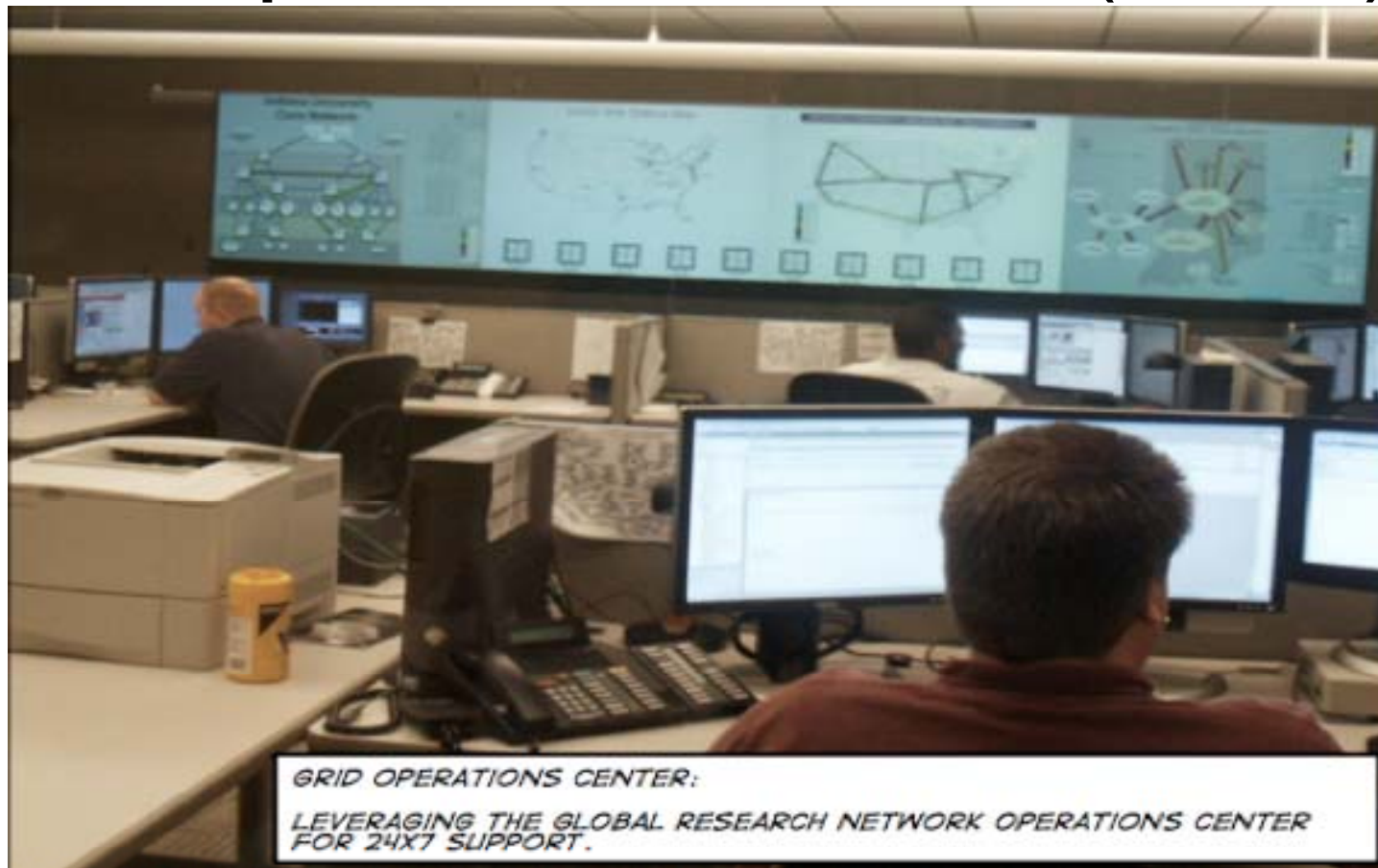
[Resource Site Verify Data](#)

[Resource BDII/GLUE Data](#)

[Virtual Organization Information](#)



The Open Science Grid Operations Center (GOC)



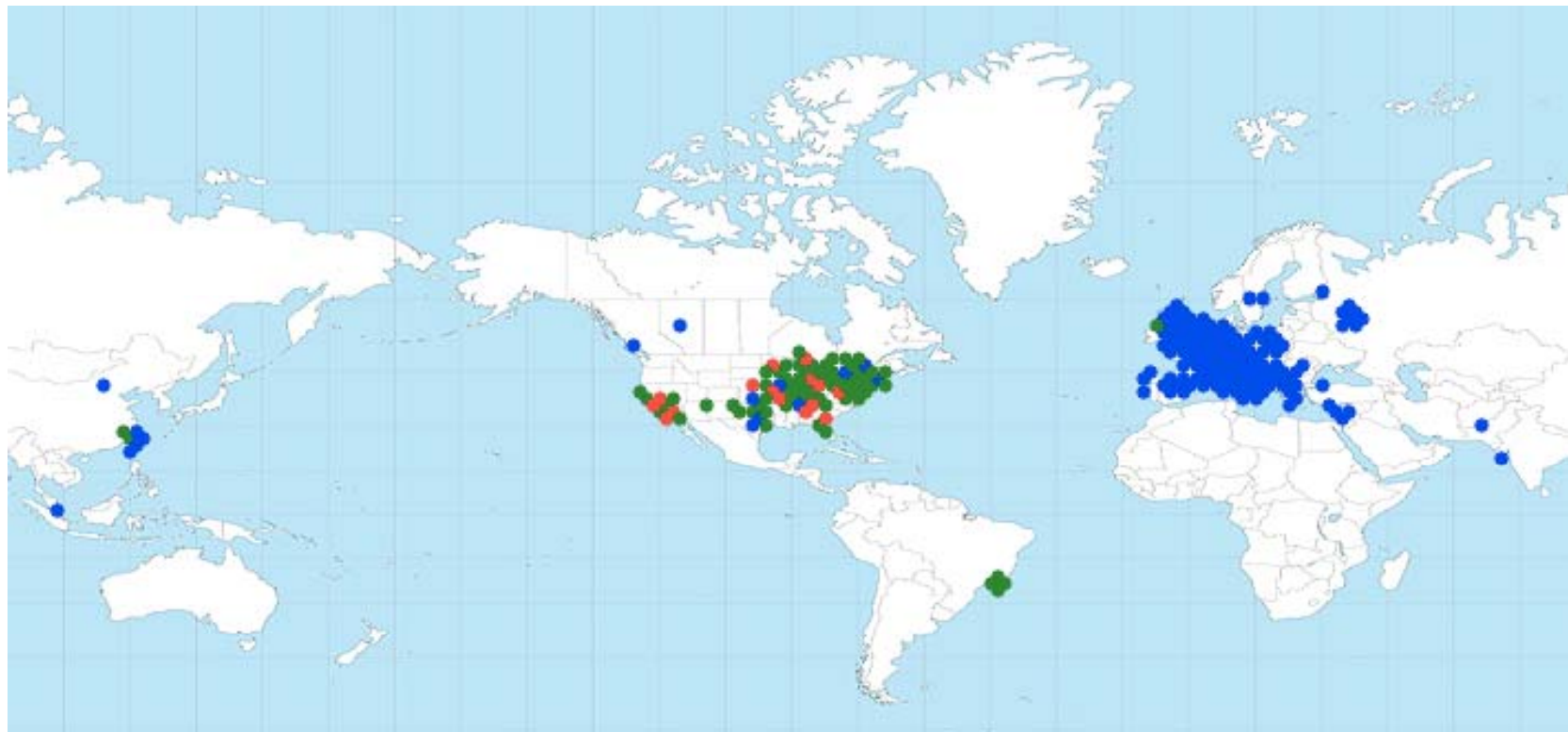


The Open Science Grid Operations Center (GOC)

- Critical Service Support
- Communication Hub
- Security Incident Response
- Provide Software Caches
- Coordinate Grid Wide Policy
- Problem Tracking and Resolution

Critical Services

- Virtual Organization Resource Selector (VORS)





Other Existing Information Services

- CEMon/BDII Integrated Server
- VOMS Monitor
- GIP Validator
- Gratia Account Data (FNAL)
- GridCat (Deprecated with Next Release)
- MonALISA (Deprecated with Next Release)
- Duplicated for Integration Test Bed



Other Infrastructure Services

- VOMS (Infrastructure and Small VOs)
- Site Maintenance Tool
- Registration Database
- Critical Service Monitoring (Nagios)



OSG Communication Hub

- Trouble Ticketing System (Footprints)
- 24x7 Trouble Reporting and Ticket Creation
- OSG Twiki
- RSS Operations News Feed
- GOC Information Web Pages (www.grid.iu.edu)
- Weekly Operations Meeting (WLCG and OSG)
- Various Mailing Lists (osg-operations@opensciencegrid.org)



Security Response

- Technician on-call 24/7/365 to evaluate security incidents.
 - Critical Incidents are Immediately Addressed with OSG Security Officer
 - security@, incident@, abuse@ opensciencegrid.org
 - 24/7/365 phone availability

OSG Software Cache

- OSG and ITB Caches
 - Compute Element
 - Configuration of Condor, PBS, LSF, SGE
 - Worker Node Client
 - Client
 - VOMS
 - GUMS
 - Patches and Optional Components
 - Coming Soon GOC Developed Packages Including Monitoring Probes





Coordinate OSG Wide Policy

- Standard Operating Procedures
- Administrative Registration Information
- Policy Enforcement





Problem Tracking and Solution

- OSG Ticketing System
 - All Problems that cross out of a VO get ticketed. This includes peering grids (EGEE).
- GOC Operators follow up on all tickets to assure acceptable solution is found.
- Automated Exchange of tickets with some Larger VOs, Service Providers, and Peering Grids.



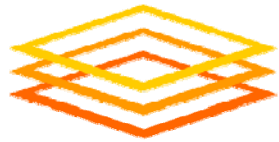
The Near Future for the OSG GOC

- Site Availability and Validation Project
 - Focus on Getting Site Administrators Involved and Feeling Responsible for Maintaining a “Good Site”
 - Series of probes based on standards of Grid Monitoring Working Group
 - Probe data will eventually feed VORS and SAM
 - Infrastructure being developed

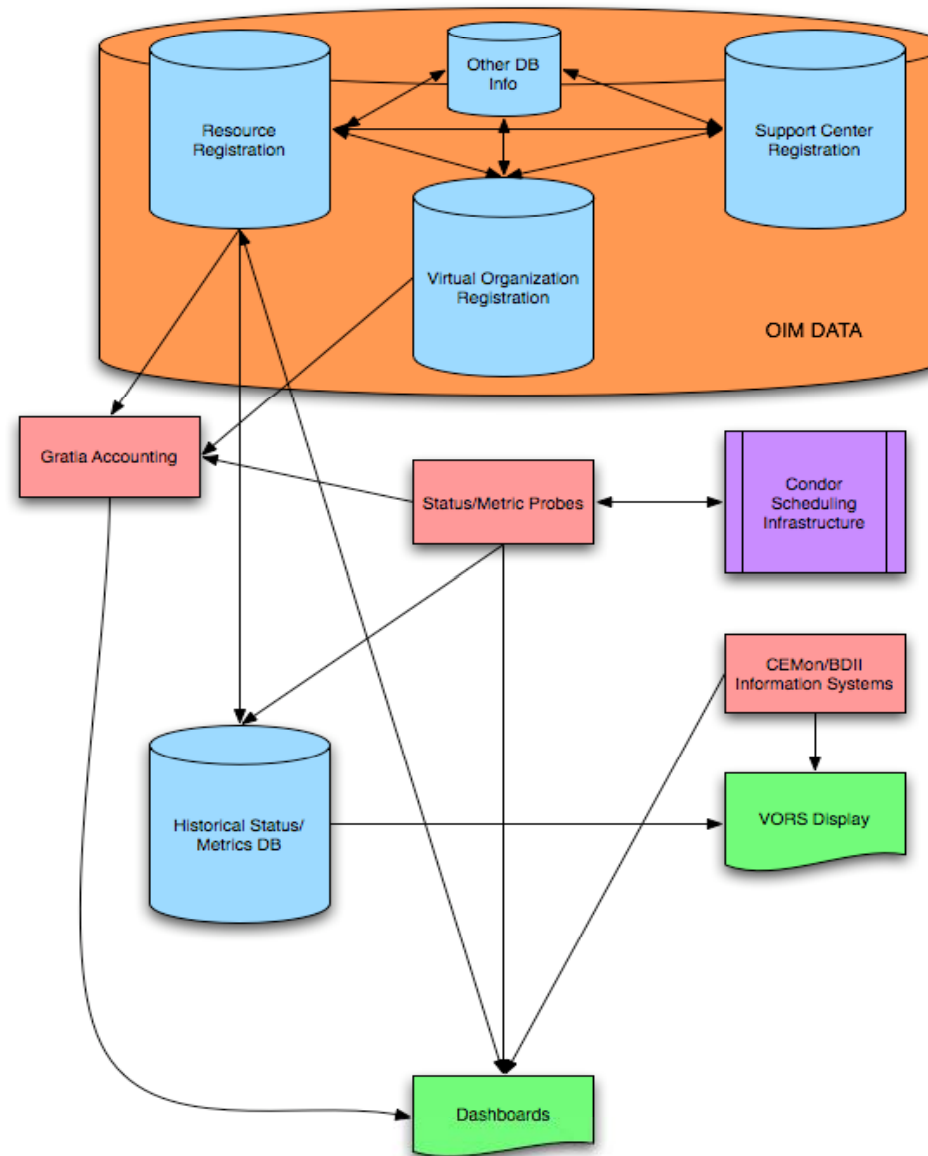


OSG Information Management Project

- Consolidating Information Within the OSG
- Schema Being Developed
- Data Will Feed OSG Monitoring Tools (VORS, Information and Accounting Services)
- Project Includes Dashboards for Site Admins, Operations, VO Admins, and Others Views yet to be defined



Open Science Grid



Other Projects

- Redundancy of Critical Services (Indianapolis and Bloomington)
- Ticket Metrics and Trending
- Smooth VO Additions
- Defining a “Good Site” and getting Site Admins interested in maintaining one
- Syslog-ng central log collection



Client Installation

- Tim Silvers - GOC Analyst

CE Installation

- TWiki Installation Instructions
- Pacman and Install
- Configuration
- Start Up of Services



Installation Instructions

- <https://twiki.grid.iu.edu/twiki/bin/view/ReleaseDocumentation/CEInstallGuide>
- # pacman -get OSG:ce
- # pacman -get OSG:Globus-
<JobManager>-Setup (Condor, LSF, PBS,
SGE)
- # pacman -get OSG:wn-clinet (Gatekeeper
and Worker Nodes)
- # pacman -get OSG:ManagedFork
(Optional)



Configuration of OSG

- #
\$VDT_LOCATION/monitoring/configur
e-osg
- Series of Questions (DEMO)

Turn on Services

- # vdt-control --on

```
[root@feynman grid]# vdt-control --list
Service          | Type   | Desired State
-----+-----+-----
fetch-crl        | cron   | enable
vdt-rotate-logs  | cron   | enable
gris             | init   | do not enable
globus-gatekeeper | inetd  | enable
gsiftp           | inetd  | enable
mysql            | init   | enable
globus-ws        | init   | enable
edg-mkgridmap    | cron   | do not enable
gums-host-cron   | cron   | enable
MLD              | init   | do not enable
apache           | init   | enable
tomcat-5         | init   | enable
```



Verify and Register

- As User

\$VDT_LOCATION/verfiy/site_verify.pl

- Register your resource at:

[https://goc.grid.iu.edu/registration/main.php?
whichReg=rp](https://goc.grid.iu.edu/registration/main.php?whichReg=rp)



GOC Services

- John Rosheck - GOC Senior System Administrator and Developer



OSG Service Links

- <https://twiki.grid.iu.edu>
- <http://software.grid.iu.edu/pacman/>
- <https://goc.grid.iu.edu/>
- <http://vors.grid.iu.edu/cgi-bin/index.cgi>
- <http://is.grid.iu.edu/cgi-bin/status.cgi>
- <http://gip-validate.grid.iu.edu/production/index.html>
- <http://gratia-osg.fnal.gov:8880/gratia-reporting/>
- <http://www.grid.iu.edu/maintenance/>
- <http://www.grid.iu.edu/news/>
- <http://www.grid.iu.edu/cgi-bin/contact.pl>

Thank You

- Special Thanks GOC Team: John Rosheck, Tim Silvers, Kyle Gross, and Arvind Gopu
- www.opensciencegrid.org
- www.grid.iu.edu