

# Open Science Grid Progress and Status

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Joint OSG and EGEE Operations Workshop  
Culham, UK  
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[www.opensciencegrid.org](http://www.opensciencegrid.org)



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- The transition from Grid3 to OSG
- Dimensions
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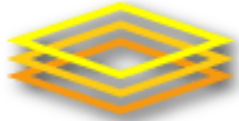


# Grid3 – January 2005

Status of Sites on Grid3 January 24<sup>th</sup> 2005  
36 sites, 3600 CPUs



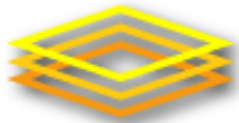
Decommissioned on 1 Sept. 2005



Open Science Grid

# OSG Ribbon Cutting – July 20



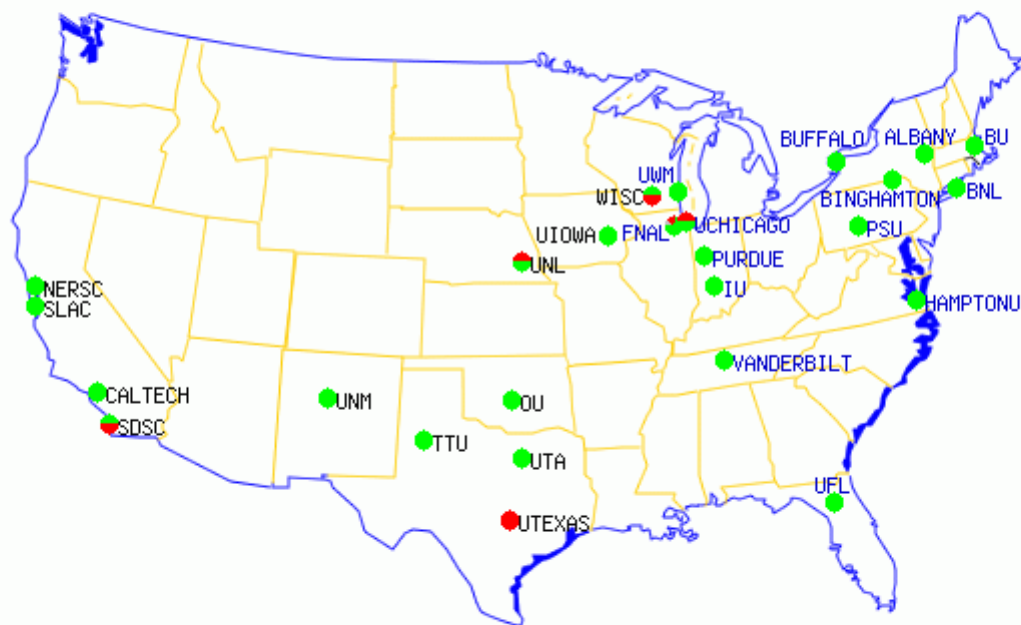


# OSG – September 2005

42 CE, 4 SE, 15K+ CPUs

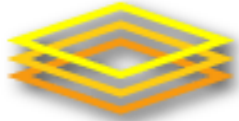


Open Science Grid



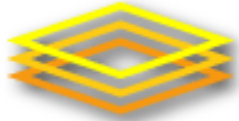
Sun Sep 25 17:38:34 GMT 2005

1 to 46 of 46 ◀▶ sort by: Service ▾ entries per page: 100 ▾ view: Summary ▾ map: U.S. ▾



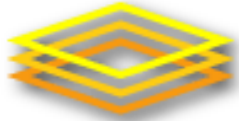
# Functionality

- Grid3
  - GT2 GRAM
  - Classic SE (GridFTP)
  - Grid3\_locations
    - \$APP, \$TMP, \$WN\_TMP
  - MonALISA
  - Ganglia
  - Gridcat
  - VOMS
  - Uniform site policy + exceptions
- OSG 0.2 (from VDT 1.3.6)
  - GT2 GRAM
  - Classic SE (GridFTP)
  - Grid3\_locations
  - MonALISA
  - Gridcat
  - ACDC monitor & dashboard
  - VOMS (vo privilege available)
  - Local site policies with mapping to VO



## Functionality (II)

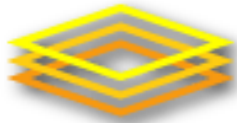
- OSG 0.4
  - end of 2005, VDT 1.3.7
  - GT4 GRAM
  - Optional support for pull-model job execution
  - JobMon
  - SRM V1.1 SE
  - Standardized WN execution environment
  - Clarens Service Discovery
  - Gridcat
  - GLUE V1.2, GIP
  - LDAP Info Svc (MDS2/BDII)
  - Some accounting
  - VOMS (privilege option)
- Policies
  - Site can have OSG 0.4 and 0.2 services
  - Specify required and optional services
  - Sites and VOs each publish their own policies
- Exact content & schedule of OSG 0.4 deployment is work in progress



# Participation

- List Virtual Organizations
  - ATLAS
  - CDF
  - DES (Dark Energy Search)
  - D0SAR
  - DZero
  - Fermilab
  - GADU
  - GRASE
  - iVDGL
  - LIGO
  - SDSS
  - STAR
  - USCMS
- List Support Centers
  - D0SAR
  - Fermilab
  - FGoc (Florida)
  - GRASE
  - LIGO
  - OSG-GOC
  - PROD\_SLAC
  - STAR
  - UC CI
  - Ulowa
  - USATLAS
  - USCMS





# Open Science Grid

## Participation (II) – OSG activities

Accounting	MI	Deploy grid accounting services, publish interfaces & provide a reference implementation. <a href="mailto:osg-accounting@opensciencegrid.org">osg-accounting@opensciencegrid.org</a>
Blueprint	G	Develop the guiding principles and road map for the architecture and services for OSG. <a href="mailto:osg-blueprint@opensciencegrid.org">osg-blueprint@opensciencegrid.org</a>
Community Support	SC	Organize support of those organizations that do not have a specific Support Center on OSG. <a href="mailto:osg-general@opensciencegrid.org">osg-general@opensciencegrid.org</a>
Deployment	G	Responds to stakeholder requirements, develops & executes the plan for deployment of the OSG. <a href="mailto:osg-deployment@opensciencegrid.org">osg-deployment@opensciencegrid.org</a>
Disk Resource Manager Deployment	St	Deploy the DRM technology onto an OSG CE site to provide managed access to tactical storage. <a href="mailto:osg-drm@opensciencegrid.org">osg-drm@opensciencegrid.org</a>
Documentation	SC	Assess, support and review web publishing & collaborative tools and documentation for OSG. <a href="mailto:osg-docs@opensciencegrid.org">osg-docs@opensciencegrid.org</a>
Edge Services		Deployment and integration of specialized services at the edge of a public/private network boundary, which act on the client's behalf within the site's private boundary. <a href="mailto:osg-edgeservices@opensciencegrid.org">osg-edgeservices@opensciencegrid.org</a>
Worker Node Environment		
Integration	G	Integrates middleware, validates OSG deployments & establishes the framework for releases. <a href="mailto:osg-int@opensciencegrid.org">osg-int@opensciencegrid.org</a>
Interoperability	G	Establish interoperable services and processes with other grid infrastructures. <a href="mailto:osg-interoperability@opensciencegrid.org">osg-interoperability@opensciencegrid.org</a>
Late-Binding WMS		Deployment and use of services that support late binding of jobs to sites that can execute them. <a href="mailto:osg-wms@opensciencegrid.org">osg-wms@opensciencegrid.org</a>
MIS-CI	MI	Common Site monitoring and information gathering infrastructure. <a href="mailto:tg-mig@opensciencegrid.org">tg-mig@opensciencegrid.org</a>
Operations	SC	Services and procedures for operation and support of the OSG. <a href="mailto:osg-operations@opensciencegrid.org">osg-operations@opensciencegrid.org</a>
Policy, Publication & Trust	S	Develop requirements documents for Site, VO, & Service Policy infrastructure.
Storage Element Development	N St	<a href="mailto:osg-storage@opensciencegrid.org">osg-storage@opensciencegrid.org</a>
TeraGrid DAC 2005	G	Explore running of US ATLAS and US CMS jobs on TeraGrid resources.
		Completed/Dormant Activities:
Incident Response	S SC	Develop Security Incident Response Plan to be included in the Operations of OSG.
Provisioning	SC	Prepare initial deployment of the OSG for Spring 2005. <a href="mailto:osg-provisioning@opensciencegrid.org">osg-provisioning@opensciencegrid.org</a>

The consortium has an open process to start new activities that advance the goals of the OSG mission.



# Participation (III)

## Registration and membership

- Open participation rules
  - Alignment with open science mission
  - Participation requires contribution to OSG goals (thresholds not defined)
- Many VOs beyond LHC
- New sites joining, without connection to LHC
- Registration
  - Sites and VOs get “formally” registered and integrated into OSG communications infrastructure

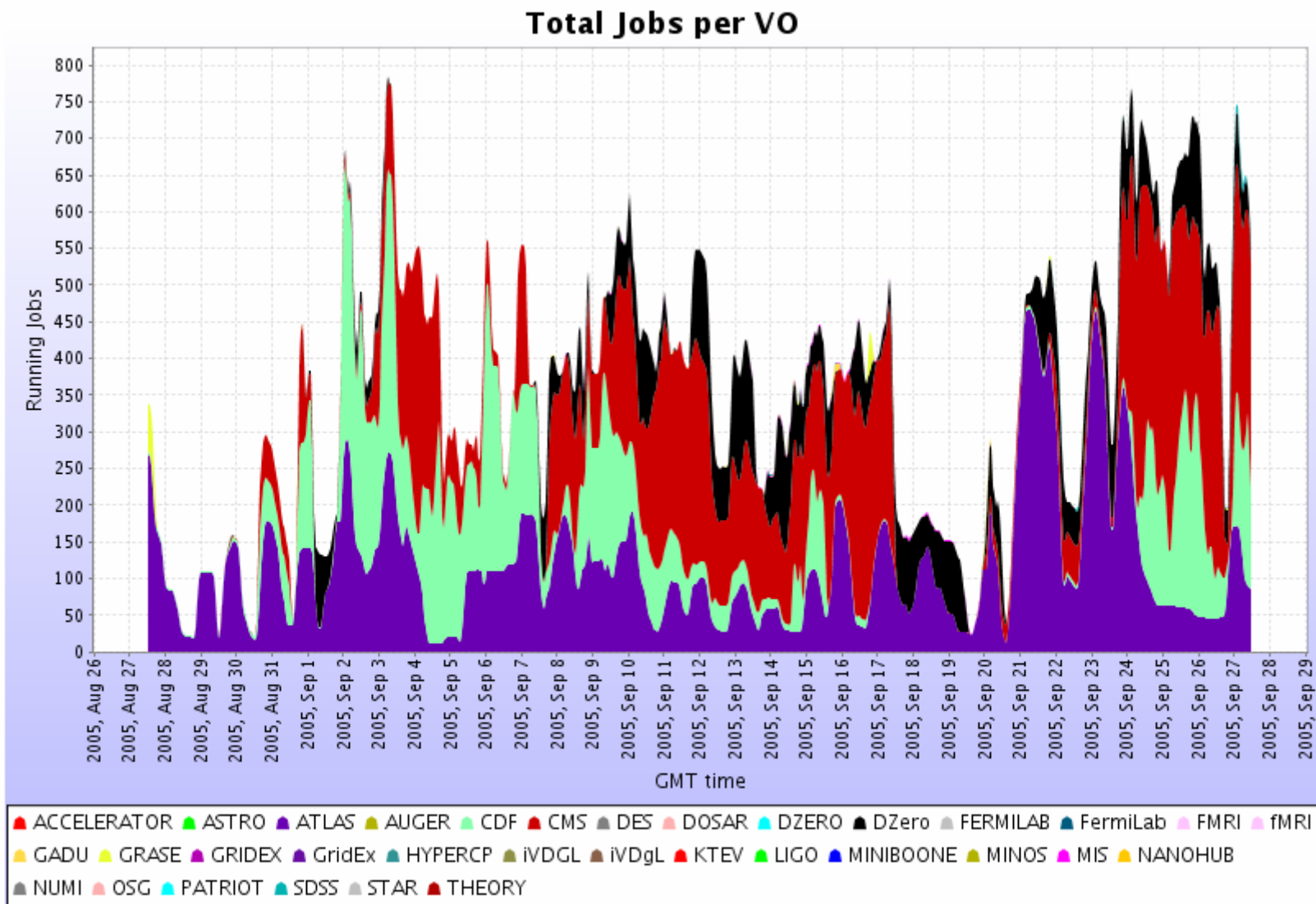


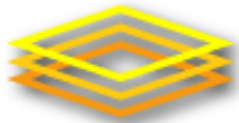
# Usage - Tickets

- 385 OSG Tickets in last 3 months
- Open tickets reviewed at Monday operations meeting




# Usage – Jobs in last Month, each VO

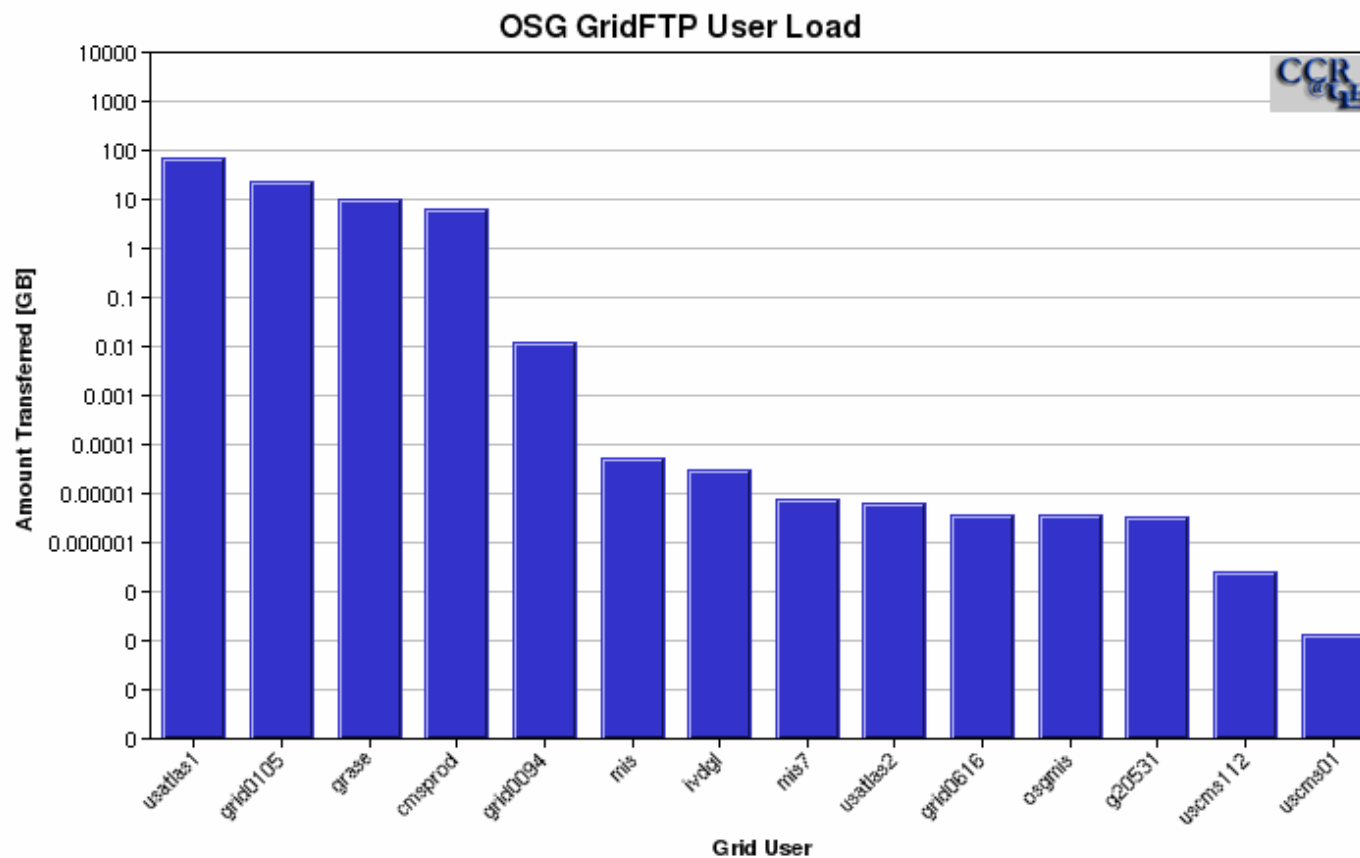


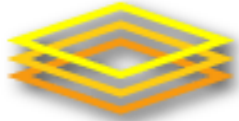


# Usage – Data (really need accounting work here)

- » Bandwidth Matrix
  - » Current Latency Matrix
  - » Historical Latency Matrix
  - » Resource Queue Visualization
  - » Resource User Visualization
  - » SnB Application Demonstrator
  - » Presentations
  - » ACDC Grid Dashboard Site Status
  - » ACDC Grid Dashboard Tutorial
  - » GRASE VO
    - » Request Membership
    - » Request Help
  - » Contact Us
  - Staff Only
- 

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# Integration

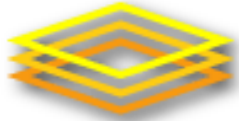
- Grid3
  - A development testbed (grid3dev) was put together to enable all non-production uses (development and integration)
  - A key part of iVDGL project
- OSG
  - Carried out on Integration Test Bed (ITB)
  - Effort provided by stakeholders that want to promote new services, or want/need to use new services
  - Key interface point for developing and maintaining interoperability



# Operations (Provisioning)

(preparing a software stack for release)

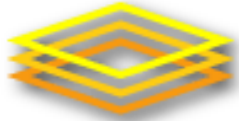
- Grid3
  - Integral part of iVD9L project
  - New services integrated on development testbed before release
- OSG
  - Organized as a separate activity for each major release
  - Effort contributed by stakeholders that want/need features of the release
  - Challenging to provide a completely documented system
  - Follows integration work on ITB



# Operations (Support)

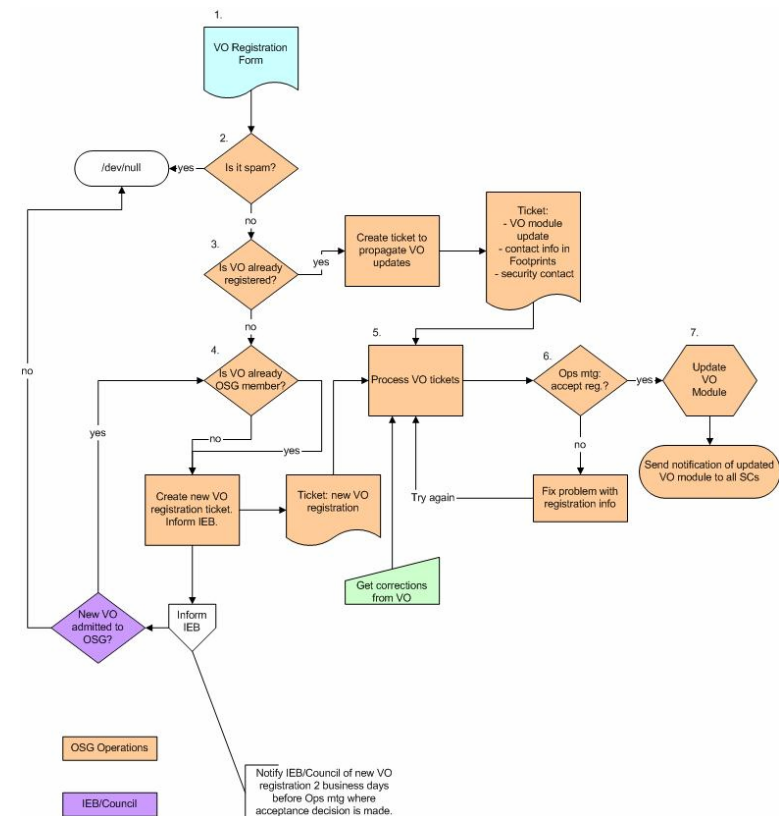
- Grid3 Operations
  - Centralized at the iGOC
  - Lead by iVDGL with some extra help
  - A learning exercise about grid and grid operations
  - Lessons learned absorbed by OSG
- OSG Operations
  - Register participants as support centers
  - Distributed across all support centers
  - GOC services contributed by several support centers
  - iGOC providing key grid-wide functions
    - Top level monitoring
    - Catalogs
    - Trouble ticket system
    - (more)
  - User support belongs to VO
  - Community Support as “best effort” help for anyone
    - Many sites & VOs do not have contracted support
    - Knowledgebase development
  - Interface to other grid operations





# Operations (Procedures)

- Developing written procedures as working documents that define and guide operations workflow.
  - VO registration
  - Service Change
  - Critical Update
  - (many more needed)





# Peering & Inter-grid interfaces

- Peering
  - EGEE
    - Much detailed discussion at this workshop, there is plenty to do
  - Teragrid
    - Working on job submission gateway
    - Interoperability
      - Security infrastructure
      - Collaborative efforts
      - Looking at software stack
  - ...
- Inter-grid interfaces
  - GRASE is NY State grid and looks like site on OSG (& vice versa?)
  - SURA Grid (TACC) – resource connected to multiple grids?
  - LONI (Louisiana) – under discussion
  - ... (above are just incomplete list of examples)

# To Be Continued

(Or what will the grid look like in 5000 years?)

