



Enabling Grids for E-scienceE

LCG Interoperations

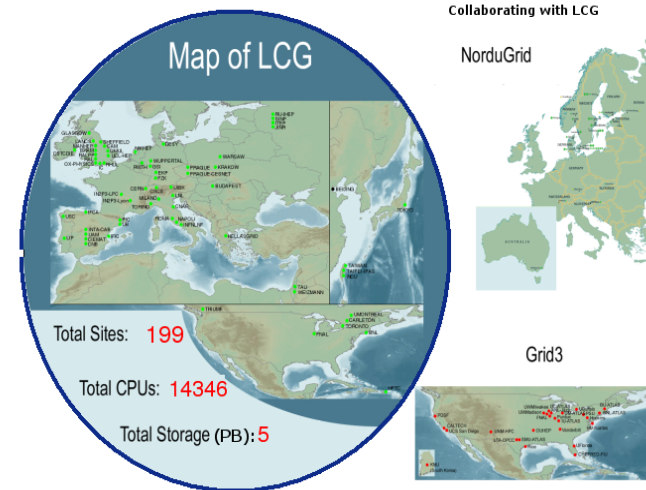
OSG & ARC

Oliver Keeble

www.eu-egee.org



- **What does interoperation mean?**
 - Resource sharing across administrative domains
 - Natural extension of each grid's efforts to include more resources in their own infrastructure
 - LCG/EGEE already federal
- **Why do we want it?**
 - Why do we want grids at all?
 - Efficiency through collaboration

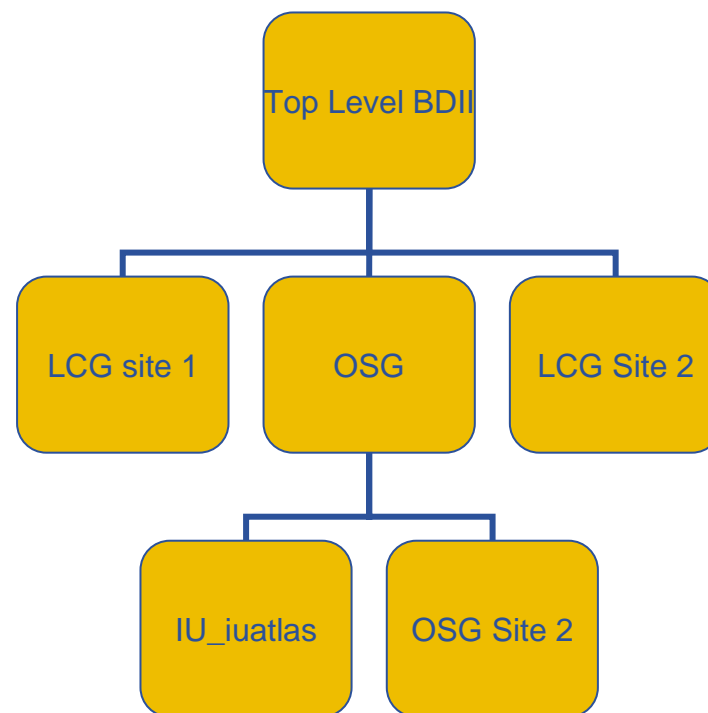


Component	LCG/EGEE	OSG	ARC
Monitoring/IS	<u>MDS</u> , <u>LDAP</u> , <u>GLUE</u> , BDII, R-GMA	<u>MDS</u> , <u>GLUE</u> , GridCat, MonALISA, <u>LDAP</u>	<u>LDAP</u> , ARC schema, <u>MDS</u>
Security	<u>GSI</u>	<u>GSI</u>	<u>GSI</u>
Software Installation	Privileged users, Publish utility	All VO members, Flatfile	
Job submission & description	<u>GRAM</u> / JDL	<u>GRAM</u> / RSL, Condor-G	GridFTP / RSL
VO support and management	<u>VOMS</u> , LDAP	<u>VOMS</u> , GUMS	<u>VOMS</u>
Data Management	<u>GridFTP</u> , LFC, RLS SRM	<u>GridFTP</u> , SRM v1.1	<u>GridFTP</u> , RC, RLS SRM v1.1 client

- Avoid Divergence!

- **Week 1**

- gip previously installed
- Set up OSG BDII on data.grid.iu.edu
- Added site IU_iuatlas to the OSG BDII
- Added OSG to the LCG GOC DB
- OSG BDII in the Gstat Grid Status Monitoring



GOC Database 2.0 - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://goc.grid-support.ac.uk/gridsite/gocdb2/index.php?siteSelect=230

Getting Started French GD CERN CIC

GOCDB2

Actions


All GOCDB sites: **Your roles:**

GOCDB sites in your scope:

DB system and web interface designed and maintained by [Matt Thorpe](#) (Grid Operations Centre, RAL) 2004-2005

OSG

Status:	Certified
Type:	Production
RDE:	OSG
Site local time (assuming home timezone is GMT):	01:50 AM (26/09/2005)
Official Name:	
Map Name:	OSG
Institution / Department Homepage:	
Site email:	goc@opensciencegrid.org
Site telephone:	+1 317-278-9699
Emergency telephone:	+1 317-278-9699
CSIRT email:	goc@opensciencegrid.org
CSIRT telephone:	+1 317-278-9699
Operational hours:	09.00 - 18.00 (PST)
Supported VOs:	DTeam
GIIS URL:	ldap://data.grid.iu.edu:2170/o=grid
Organisation:	LCG2

 MONITORING: ON

Nodes:

Nodetype	Machine	Monitored

Scheduled Downtimes:

Done goc.grid-support.ac.uk

- Week 2**

- LCG client tools installed as exp software
- Site Passes Gstat Grid Status tests
- LCG to OSG job submissions working via RB

106	NSC-BLUESMOKE	n100.bluesmoke.nsc.liu.se	error	warn	ok	ok	ok	LCG-2 6 0	97	0	0	1.34	0.00	98	73	SD	inf	
107	obsARMuk	gridgate.arm.ac.uk	.	.	ok	ok	ok	LCG-2 4 0	1	1	0	0.03	0.00	1	0	OK	.	
108	OSG	data.grid.iu.edu	.	.	ok	ok	.	.	5	2	3	0.28	0.02	7	5	JS	JS	
109	OXFORD-01-LCG2	t2ce02.physics.ox.ac.uk	.	.	ok	ok	ok	LCG-2 6 0	74	15	59	0	1.41	0.07	74	68	OK	.
110	PAKGRID-LCG2	CE.pakgrid.org.pk	.	.	.	error	errorna	1	0	JL	.	

- Week 3**

- SFTs running at the OSG site.
 - All green except for accounting and CAs
 - Needed modification to find middleware
 - MON box at CERN
- OSG to LCG job submissions working

- **Benefited from commonalities**
- **Install LCG middleware on OSG WNs**
 - Using relocatable tarball distro and yaim
- **Added to GOCdb**
 - automatically incorporated into BDII and Gstat
- **Integrate into SFTs and CIC operations**
 - OSG is not transparently one site
 - Constituent sites republished to R-GMA
- **ivdgl VO enabled on test CE**

LCG wants to minimise this list...

- **Add OSG to GOCdb**
- **Commission 'top level' BDII**
 - Add sites to their BDII when desired

At the site level:

- **Support dteam**
- **Install Generic Info Provider**
- **Join the OSG top level BDII**
- **Try to ensure WNs need not be touched, but require**
 - \$GLOBUS available
 - \$GLOBUS_LOCATION/tmp to be writable
 - These requirements should disappear when jobs can automatically find the dteam installed LCG middleware
 - CAs

- **Interoperation is a mutual process...**
- **LCG to OSG**
 - OSG appears as a single site
 - 3 OSG sites moving to full interoperability
 - IS, monitoring, job matches, data transfer
 - Modified SFTs pass with the exception of Accounting and CAs
 - Generic Info Provider installed
 - Dteam supported
- **OSG to LCG**
 - Job submission works
 - Further work required on OSG monitoring of LCG sites
 - No standard monitoring interface

- **LCG jobs need to source the environment**
 - Requires RB fix
- **Investigate the exp software installation and advertisement**
 - Harmonisation?
- **VOs and their management**
 - Common monitoring VO?
 - GUMS / VOMS versioning
- **CAs**
- **Accounting**
 - Adequate logging for audit
- **Operations**
 - What happen when sites have problems
 - EGEE has a very proactive operations policy
- **Monitoring**
 - Suffer from lack of common interfaces, N² problem
 - MonALISA/R-GMA interoperation
 - MIS-CI
- **Data Management**
 - FTS
- **Add more OSG sites!**

- **From the meeting between LCG and Nordugrid at CERN 31st August 2005, three options were presented.**
 - LONG TERM - Agree on the interfaces at the site level and work towards producing code that works with these interfaces.
 - Deploy the LCG CE and SE information provider in parallel with the ARC
 - MEDIUM TERM - Present these interfaces at the Grid boundary and create a portal that does forwarding and translation.
 - SHORT TERM - Deploy the LCG and ARC CE in parallel at large sites.
- **Outstanding Tasks**
 - Document the LCG CE
 - LCG to ARC job submission
 - ARC to LCG job submission
 - Service Discovery / Glue 2

- **Interoperation is a natural result of the grid concept**
- **Will benefit all involved**
- **We don't have too much time**
- **OSG**
 - Progressing well
 - Add more sites
 - Move towards a standard for monitoring
- **ARC**
 - Number of options being considered for progressing