



# Summary: Deployment

**Markus Schulz**

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# Presentations



## Status and progress reports

- LCG2 Status (Ian Bird)
- Status of the Grid Operation Center (David Kant)
- LCG1->LCG2 transition

## Services

- Information Systems and Monitoring (Laurence Field)
- Storage in LCG2 (Jean-Philippe Baud)

## Code Maintenance, Installation and Configuration

- Code, builds, and tasks (Maarten Litmaath)
- Manual installation & configuration (Antonio Retico & Alessandro Usai)
- Quattor, an Overview (German Cancio)



# LCG2 Deployment Status



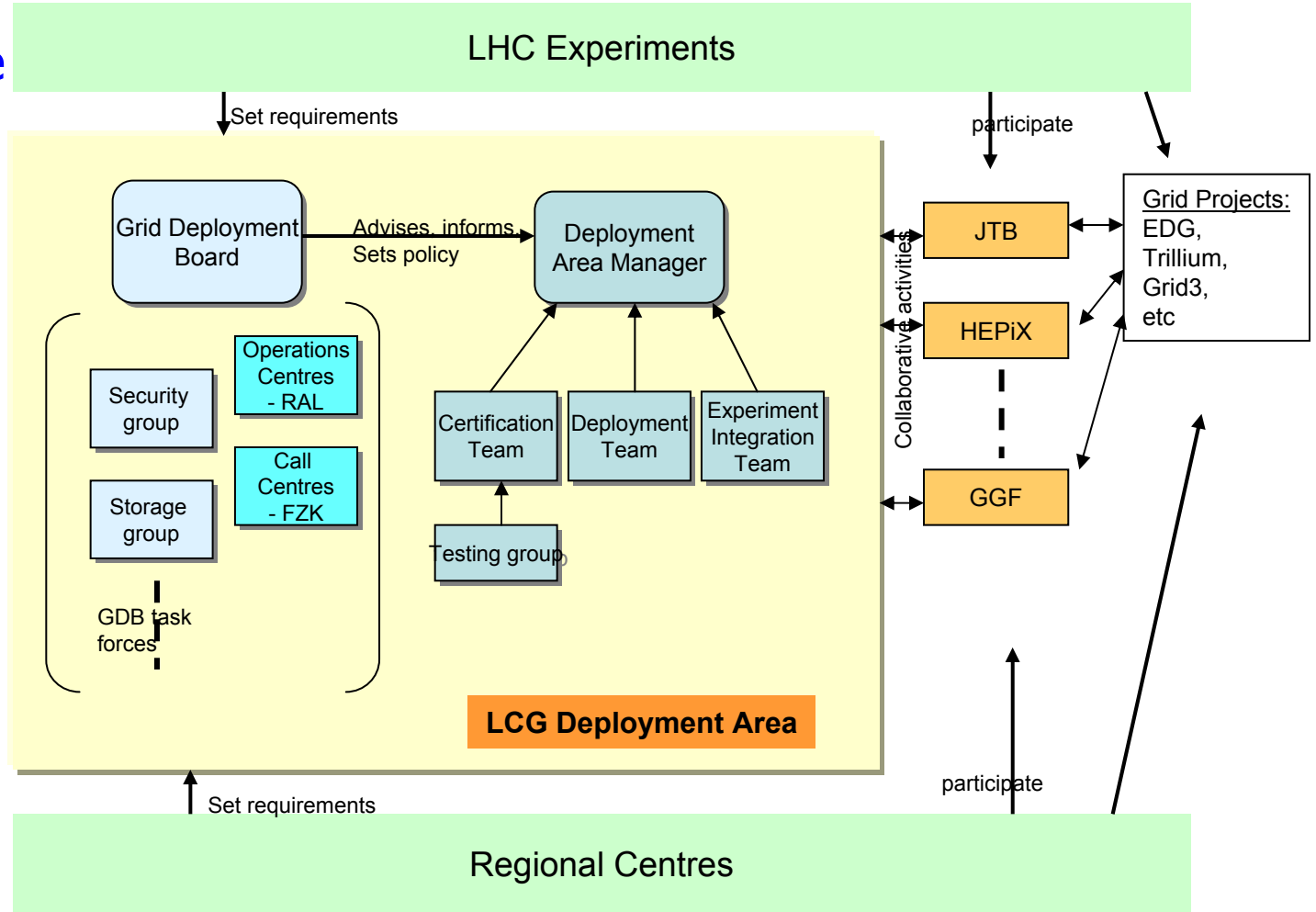
- **Timing:**
  - At the point of moving from testing to production
    - Data challenges have started;
    - Have a reasonably stable set of middleware
    - Change of focus from integration/certification towards operations
  - Good time to reflect on what needs to be addressed for the future
  - Inconvenient as difficult to organise during DC start-up activities
- **Goals of the workshop for deployment activities:**
  - Get more people involved – and gain a common understanding
  - Generate collaborative projects in areas that need effort
  - Bring up issues that need to be discussed more widely
- **Human Resources**
  - CERN/LCG 23.5FTEs GDA has been very understaffed, recently +7 fellows
  - Several external activities
    - Testbeds, VDT testers, RC system managers, Security Task Force, GOC, User Support...
  - More opportunities for collaborative involvement in operational activities



# LCG2 Deployment Status



- Structure



## LCG Deployment Organisation and Collaborations



# LCG2 Deployment Status



## Communication:

- Weekly GDA meetings (Monday 14:00, VRVS, phone)
  - Mail-list – [project-lcg-gda@cern.ch](mailto:project-lcg-gda@cern.ch)
  - Open to all – need experiments, regional centres, etc.
  - Experience so far:
    - Experiments join, regional centres don't
- Weekly core site phone conference
  - Address specific issues with deployment
- Also at CERN:
  - Weekly DC coordination meetings with each experiment
- GDB meetings monthly
  - Make sure your GDB rep keeps you informed
- Open to ways to improve communication!



# LCG2 Deployment Status



## LCG2 Core Sites

- Experience with LCG-1 showed:
  - Many sites had configuration problems – cost much effort to resolve
  - Problem sites caused problems for the whole system
- For LCG-2 GDB agreed:
  - Start with set of core sites, that:
    - Could commit significant compute and storage resources
    - Would guarantee to make the service stable
  - in order to get the data challenges started and stabilised
  - Then bring in other sites – one-by-one as each is verified to be correctly configured and stable
  - Leave LCG-1 in place while LCG-2 was stabilised
- Status today:
  - Ready to migrate LCG-1 sites to LCG-2, include new sites that have come since December



# LCG2 Deployment Status



LCG2 Core Sites: Resources (at several places integrated with local resources)

Site	LCG-2 CPU	January commitment
CERN	324	400
FZK	144	100
PIC	160	100
FNAL	4	10
CNAF	715	400
Nikhef	250	124
Taipei	98	60
RAL	146	140
<b>Total</b>	<b>1841</b>	<b>1334</b>



# LCG2 Deployment Status



## Developments 2004

- **Functional and Operational**

- Integration of MSS, disk pools, large clusters
- Distributed RLS
- Monitoring, proactive problem finding
- Accounting and reporting
- Improve reliability and robustness
- Monthly coordinated release process

- **Issues**

- portability (middleware dependencies)
- “24x7” operational support? (GOC at RAL+Taipei+Canada?)
- Monitoring





# Grid Operation Center



Tasks: monitoring, problem spotting, information gathering (sites), accounting

see <http://goc.grid-support.ac.uk/>

- GOC Site Database
  - Site information, contact lists, status information
  - Access controlled via X509 certificates (GridSite)
  - Basis for the monitoring
- Various monitoring services based on different sources
  - GPPMON based on test jobs that are run on the system
  - **MAPCENTRE** <http://mapcenter.in2p3.fr/>
  - **GPPMON** <http://goc.grid-support.ac.uk/>
  - **GRIDICE** <http://edt002.cnaf.infn.it:50080/gridice/>
  - **NAGIOS** <http://www.nagios.org/>
  - **MONALISA** <http://monalisa.cacr.caltech.edu/>





# Grid Operation Center



- GOC is currently replicated to Taipei
  - Second center +8h shifted
- Experiments add more and more “private” resources + multiple grids
  - Monitoring? Accounting?
  - Wanted? Required? How?
- Accounting
  - **R-GMA based**
  - **Logfiles and accounting files filtered to obtain information**
  - **Data stored in a relational DB**
  - **For each batch system in use the filter has to be adapted (Responsibility of sites)**
  - **First thoughts on accounting of storage**
  - **The link between a user’s DN and the VO is currently non trivial**
  - **Ready for the release in April 2004 (testing, documentation and packaging done)**



# LCG1->LCG2



- Only well tested sites should be added to the core
  - More testing
  - Testing by the experiments
  - Tested and non tested sites should not live in the same environment
    - This avoids faulty sites to attract jobs.
- Based on the new LCG-BDII we can separate LCG2 into different views.
  - A view is represented by a configuration file for the BDII
  - Experiments can provide their own configuration files and add/remove resources



# LCG1->LCG2



- Currently: Views for CMS, LCG2 Production, and LCG2 TestZone.
- Moving a site from LCG1->LCG2
  - Site contacts primary site (CERN in case of an independent sites)
  - Site installs given tag using the preferred procedure
    - Initially the site installs CEs, WNs, and SEs only using the testZone RB and BDII
  - Site contacts primary site
  - Primary sites sends site GIIS name and hostname to the deployment team
    - deployment team adds the site to the TestZone configuration
  - primary site runs initial checks and solves problems with the site
    - do simple jobs run?
    - can the site access storage (local, remote)?
    - do the datamanagement tools work?
    - is the experiment software installation mechanism working?
  - The deployment team runs a test suite on the new site
  - The experiments will be invited to run their test jobs on the site
  - The deployment team repeats their tests.
  - Site is added to the core sites.
- Moving of LCG1sites to LCG2 has been delayed (data challenges, man power)



# Information Systems & Monitoring



## New LCG BDII

- Improved stability and performance compared to MDS
- Can replace MDS on all levels
- Different topologies can be deployed
- Can be used to create different "Views" of grids
- Experiments can add/remove resources

## New Generic Information Provider

- Simple and flexible configuration

## Glue Schema

- Several issues have been brought up
- It was expressed that the process for maintenance and change has to be accelerated (Joint Technical Board + Schema Maintainers)

## Monitoring

Laurence illustrated why R-GMA is the better tool for monitoring and how GRIDIce could be converted.

R-GMA is well suited for experiment specific monitoring (dynamic schema creation)



# LCG2 Storage



Managed disk and MSS systems with common interface: SRM

- For disks currently a dCache based system is tested (DESY/FNAL)
- HRM/DRM will be part of VDT
  - (Lyon is evaluating it as MSS frontend )

February: SRM for Castor, Enstore, HPSS, classic SE for disks

Next release: SRM for MSS and disk based systems (dCache). Classical SEs can stay

- GFAL lib for transparent access included
- GFAL file system in preparation (not included in the release)
- The latest release of the Replica Manager works with SRM-SE and classical SEs
- A set of test suites is available to test for function and interoperability



# From Code To Release



LCG maintains now the middleware software

- Autobuild system adapted from EDG

Complex testbeds for Certification and Testing

- Well defined release procedure with monthly releases

Tasks for this year:

- Clean up the configuration and dependencies
- Port to a different platform(s)

Manual (generic) Installation

Done for all node types (except one)

Will be maintained for future releases

Quattor

Presentation created some interest

Currently not clear if and how LCG should move to new tool

First steps towards Quattor are to cleanup the configuration, this has to be done for the porting efforts anyway

Friday workshop with interested sites will help to understand this better