Grid Deployment – Quarterly Report Q403

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SC2 Meeting

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General

- LCG-1 was available on Sep 15
- Deployed to 25 sites by end of year
- Others preparing to join:
  - Lyon, CSCS, Triumf, Pakistan, IHEP
- Experiment started testing and limited productions were done over Christmas by:
  - CMS and Atlas
  - Interoperation tests with Grid3 in conjunction with US-Atlas
- Problems with stability of site configurations

- Compressed timescales:
  - Integration (not LCG role!), testing, certification, bug fixing, deployment, testing, experiment integration and production – all was in parallel
  - Showed need for dedicated experiment integration test-bed
- In parallel LCG-2 preparation was under way
- Clearly was not optimal!

Tier 1	Associated Tier 2
CERN	Budapest, Prague
BNL	
CNAF	Rome, Legnaro, Milan, Torino
FNAL	
FZK	Krakow
Moscow	
PIC	IFIC-Valencia, CIEMAT-Madrid, UAM-Madrid, USC, UB-Barcelona, IFCA-Santander
RAL	IC, Cambridge
Taipei	
Tokyo	

Work done in Q403 - milestones

- **1.4.1.7 (L2 external) Experiment Verification (1 October 2003)**
  - Late, but consider that successful productions at Christmas satisfy this
- **1.4.2.4 (L2) Middleware functionality complete (1 October 2003)**
  - LCG-2 mw release was ready Dec 15. Many problems in Globus, Condor, WP1, WP2
- **1.4.2.5 (L2) Job Execution Model Defined (30 September 2003)**
  - Included in comprehensive User Guide (Sep 15)
- **1.4.2.3 (L2) Tier 2 centres included (31 October 2003)**
  - Met – 25 sites in LCG-1 including Tier2 in Spain, Italy, UK, Poland
- **1.4.2.6 (L2) Second prototype operations centre and user support operational (30 October 2003)**
  - 2nd GOC delayed by GDB until 2004. User Support set up by FZK
- **1.4.2.8 (L2) Upgraded middleware deployed (15 October 2003)**
  - Delayed – LCG-2 deployment started Jan 5
- **1.4.2.9 (L2) Security procedures in place for 2004 (1 December 2003)**
  - Met. Security policy approved by GDB in Nov. Registration procedures and operational policies in place (audit logs, incident response, etc)
- **1.4.2.11 (L2) Service review complete (24 November 2003)**
  - Internal and LHCC reviews superceded this; but little operational experience before these reviews,
- **M1.4 (L1) LCG-1 Fully operational (28 November 2003)**
  - Deployment of LCG-2 middleware into production
  - Earlier delays push this into 2004 Q1.

Proposed work in Q104

- Take over management of used EDG code
  - Address stability, dependencies, portability, packaging, configuration, …

- Run stable LCG-2 service during 2004
  - Assume will be in place at least 1 year – work to make robust and functional for the experiments' needs

- Deploy prototype web-services "pre-production" service
  - As soon as possible – even basic framework

- Focus on operations –
  - Support and operations infrastructures

- Functionality
  - Data management is #1
  - Distributed RLS/RLI
  - R-GMA as monitoring system

Proposed Service milestones:

- **M1.4 (L1)** LCG-1 Fully operational: LCG-2 operational at Core sites (Feb 1 2004)
  - The LCG-2 service should be operational at the cores sites agreed at the January GDB, with the full complement of resources agreed available to the service.
- 1.4.x.2: Run 30 day verification (15 Feb-15 March 2004)
  - Run a 30-day stability and performance test. It is expected that the use of the system would be the ongoing data challenges of Alice and preparation by other experiments. Determining metrics for throughput and stability in order to set a performance baseline for later comparison.
- 1.4.x.2: LCG-2 operational at 30 sites (May 1 2004)
  - The inclusion into the LCG-2 service of all the sites that had been in LCG-1. Levels of resources available at each should be consistent with their commitments which should be presented and discussed at the GDB's in March and April.
- **M1.5 (L1):** 50% prototype (December)
  - Run 30 day performance test and make a comparison to the February baseline measurement.

Proposed Operations L2:

- ## 1.4.y.1: Basic accounting service (March 1 2004)

  - The basic usage accounting system, recording at least CPU usage (jobs, SI2K, etc) for VO's and for users must be in full production operation. In addition by this time all previously save batch llogs corresponding to the periods of data challenges should have been processed so that a full record of resource use during the data challenges is available.

- ## 1.4.y.2: Second GOC in operations (June 1 2004)

  - A second GOC, potentially in Taipei should be operational, with 16 hour per day coverage shared with RAL. Mechanisms for service hand-over and continued problem resolution should be in place. RAL should take responsibility for setting this up with Taipei and agreeing it through the GDB.

Proposed Support L2:

- 1.4.z.1: FZK Support portal as front line user support (1 June 2004)

  - The FZK user support portal should be where all user problem reports are sent first. This requires the team at FZK acquiring sufficient knowledge and training to be able to provide this support, and sufficient integration of the portal with other problem tracking systems to enable sending and tracking of problems to the appropriate teams.

Proposed Experiment Verification of LCG-2:

- **1.4.a.1**: Report on ALICE DC initial experience (1 April 2004)

- **1.4.b.2**: Report on CMS DC04 initial experience (1 May 2004)

- **1.4.b.3**: Report on Atlas initial experience (1 May 2004)

- **1.4.b.4**: Report on LHCb initial experience (1 May 2004)

  - Each of these reports should describe the experiments' experience of their first 2 months use of LCG-2, and should cover all aspects of the LCG service from middleware functionality and stability, missing functionality or requests for modifications, technical and user support, operational experience and stability etc. It is expected that the reports will be written by the experiments together with the Experiment Integration Support team of the GDA.

Proposed Middleware L2:

- 1.4.c.1: WN middleware ported to RHEL*, report on ease of porting to other OS's (1 May 2004)
    - *some other Linux version
    - The middleware needed for the Worker nodes should be running on at least one OS other than RH 7.3 (perhaps RH Enterprise Linux – to be defined). A report on the problems encountered should be available, so that a plan for addressing other OS platforms and other middleware services can be determined.

- 1.4.c.2: Configuration tool available (1 July 2004)
    - An automated tool should be provided that enables a straightforward configuration of a site. What is required and how it is implemented should be discussed in the site administrators' forum.

- 1.4.c.3: Replica Manager upgrade (1 August 2004)
    - Upgraded data management tools to be available. This should include a distributed version of the RLS, and a replica manager service that acts on behalf of the worker nodes. This upgrade should remove the requirement of worker node outbound IP connectivity for data management.

Resources

Activity	CERN/LCG	External	Comment
Integration & Certification	6	External tb sites	Collaborative activity
Debugging/development/mw support	3		
Testing	3	2 + VDT testers group	Russian group (3) has 1 at CERN per 3 months
Experiment Integration & Support	5		
Deployment & Infrastructure Support	5.5	RC system managers	
Security/VO Management	2	Security Task Force	
Operations Centres		RAL + GOC Task Force	
Grid User Support		FZK + US Task Force	
Management	1		
Totals	**25.5**		

- 6 new INFN Fellows (5 in Oct, 1 Nov), 1 new FZK staff (Oct)
- Now at close to anticipated level – but much later!
- All LCG-1 and LCG-2 prep was done at 70% of full complement