



Enabling Grids for E-scienceE

gLite Status and Roadmap

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*Meeting with LHCC Referees
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www.eu-egee.org



- **gLite Services in Release 1.0**
 - Certification and Testing Status
 - Most important problems
- **Roadmap & Deployment**
- **Summary**

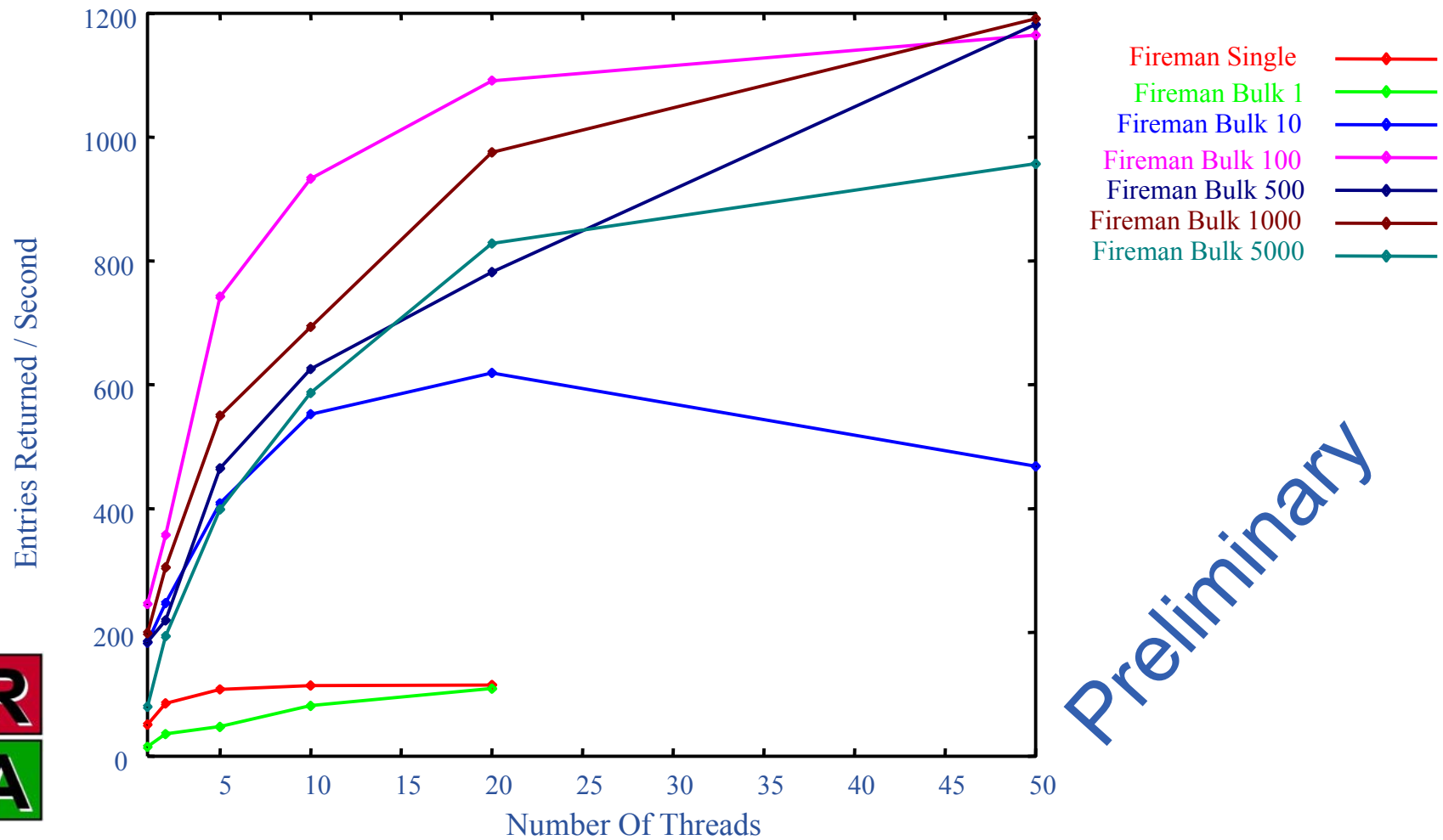
- **Release 1.0 produced on April 5, 2005**
 - RPM's, Source or Binary Tarballs and APT
 - LCG now received tested releases, not integration builds anymore
 - Four Quick fixes have been produced to date
 - Installation Guide, Release Notes, User and API Documentation available.
- **Currently being tested and certified by**
 - LCG Deployment and ARDA
 - EGEE applications (Bio-Medical, NA4 Testing, GILDA, Training)
- **Other Communities giving feedback**
 - DILIGENT
 - UK NGS & OMII
 - And others

- **Workload Management System**
 - Comprising RB, CE with CEMon, Logging and Bookkeeping; with Task Queue, Push & Pull and Interface to Data Management (StorageIndex, DLI and RLS)
 - Available in the prototype testbed, on the Certification Testbed and on some of the Preproduction Service Phase I
 - Uses BDII as information system
 - JRA1 Test [suite](#), [output](#) and [report](#) available, [LCG Certification Tests \(TSTG\)](#) mostly available ([24 out of 27 tests](#)), [LCG Site functional Tests \(SFT\)](#) ported to gLite.
 - Compatibility with LCG-2 CE and WN (LCG 2.4.0)
 - WN can be both LCG-2 and gLite
 - gLite UI can submit to LCG-2 WMS, but not the reverse
 - Most significant problems
 - #6658: 5-10% error rate (Condor related) if `retrycount == 0`
 - *Will differentiate CE submission retries with job submission retries*
 - First job submitted as a local user almost always fail
 - *Race condition in launching the initial job*

- **Data Management**
 - Single Catalog
 - Oracle and MySQL, Command line Interfaces
 - *Focusing on Oracle*
 - *Secure version in 1.1*
 - Limited Metadata functions
 - Available in the Prototype Testbed and on the Certification Testbed
 - Pool Interface written and scheduled to be released with POOL 2.1
 - JRA1 [Test Suite](#), [Tests Report](#) and [Tests Output](#) available
 - ARDA Performance Tests [available](#)
 - Early ARDA tests have been contributed to JRA1 test suite
 - Most significant problems (Oracle only)
 - *#7277: Installation scratches the database*
 - *#7166: Mkdir -p does not create parent directories*
 - *But ... little usage & experience so far*
 - Agreed metadata catalog (HEP, BioMed) scheduled for 1.3
 - *Collaborative effort between gLite and ARDA, but also involving UK Metadata and several HEP experiments.*

- **Data Management**
 - gLite I/O
 - Provides secure POSIX-like access to Grid files
 - Available in the prototype testbed, on the Certification Testbed and on some of the Preproduction Service Phase I
 - Available in the Prototype Testbed and on the Certification Testbed
 - JRA1 [Test Suite](#), [Tests Report](#) and [Tests Output](#) available
 - ARDA Performance Tests merged in JRA1 test suite
 - Most significant problems:
 - #5079: *Timeouts with very large files (SRM timeouts)*
 - #6043: *concurrent access I/O errors (not able to reproduce)*
 - *Security model: Grid vs. Local security*
 - File Transfer Service
 - Not available on 1.0; scheduled for 1.1
 - *To cope with Service Challenge requirements*
 - March 15, 2005 milestone achieved
 - Service being setup this week
 - *Installation from deployment modules*
 - *Plan: First at CERN, add dCache, add T1's, involve experiments*
 - Tests being integrated

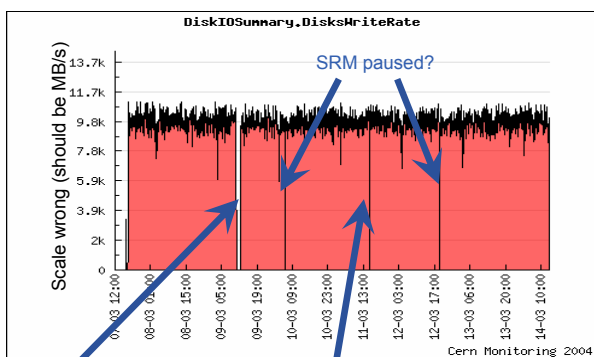
- Query Rate for an LFN



Preliminary

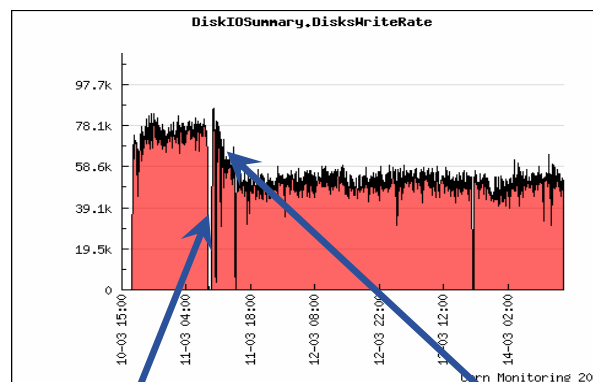
- **File Transfer (Placement) Service**

- FTS is being evolved as required by SA1 Service Challenges
 - The version in Release 1 is *not* the one that is going to be used for Service Challenges
 - Scheduled for Release 1.1
- Weekly monitoring
 - <http://egee-jra1-dm.web.cern.ch/egee-jra1-dm/transfer/index.htm>
- Milestone to have a stable “demo” running by March 15, 2005 met



Daemon died:
No state was
lost

10g DB service restarted – daemon
does not yet recover bad connection



Critical bug found in transfer
code (the new MyProxy part):
Bug-fixed version was deployed
and service restarted.

Transfer request distribution changed

- **Other Services & Tools**

- R-GMA

- Available in the prototype testbed, on the Certification Testbed and on some of the Preproduction Service Phase I and on the Production Service
 - Test report and output available
 - Most significant problems:
 - #7437: *Performance problems with large result set*
 - #8099: *Inconsistency between archivers*
 - *Difficult to deploy*
 - *3 versions (LCG, gLite, gLite with Web Services)*
 - Refocused work to satisfy LCG performance requirements

- Service Discovery API

- Available in the prototype testbed
 - Not used by any service yet

- VOMS

- Available in the prototype testbed, on the Certification Testbed
 - Test defined and being written
 - Most significant problem:
 - *Incompatibility with previous versions*
 - *Due to compatibility with standards (RFC)*

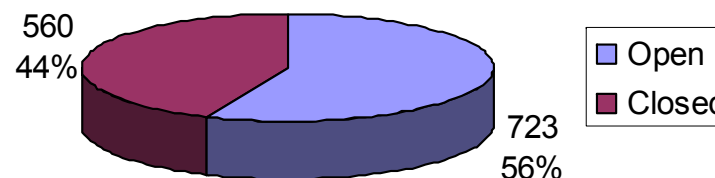
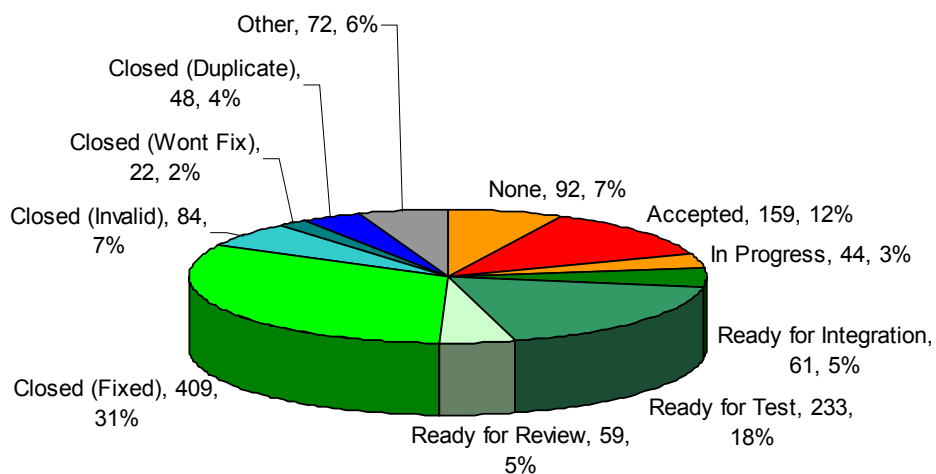
- CLI (UI) – Worker Node

- Also installable as non-privileged user
 - CLI available for WMS, L&B, Catalog, gLite I/O, R-GMA, VOMS

As of April 5, 2005

Total open/closed bugs
(Total = 1283)

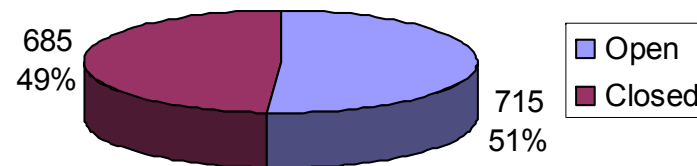
Bugs by status



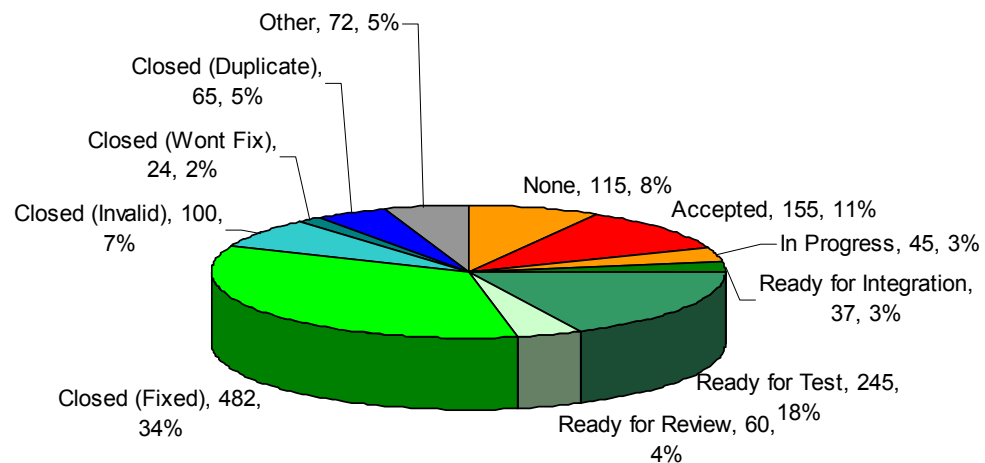
Post Release Defect Density: 1.14 defects/KSLOC

As of May 2, 2005

Total open/closed bugs
(Total = 1400)



Bugs by status



- **Priority is bug fixing**
 - In the next 12 months this is expected to be the highest load (and the associated testing, validation and support load)
 - The developer teams are preparing for this
- **Release 1.1**
 - Quick fixes integration
 - 100+ defects confirmed fixed since Release 1.0
 - File Transfer Service
 - Secure Oracle & MySQL Catalog
 - Release on April 29, 2005, being tested
 - Scheduled for May 9, 2005
- **Possible improvements are described in the workplan document**
 - https://edms.cern.ch/file/573493/4/EGEE-JRA1-TEC-573493-Work_Plan-v0.11.doc
 - Priorities need to be decided by Applications and Operations
 - Current plans for 1.2 include
 - Web Services Interface to WMS
 - *Bulk Job submission*
 - *Parameterized jobs*
 - Catalog Interface to FTS
 - *File Placement Service*
 - Prioritization will involve the relevant partners. New development possible if
 - does not affect the stability of the system
 - according to Deployment and Applications priorities

- In order to be more pro-active/aggressive in deploying gLite:
- **Deploy in parallel to LCG-2.x.x – gLite “as-is”**
 - Select major sites to deploy to (SC3 → Tier1s)
 - Deploy gLite and LCG-2.x.x side by side
 - Means additional service machines required
 - Allows direct comparison
 - Keeps production service unaffected
 - “Certification” will be “stupidity test” rather than full set of stress testing
 - gLite package not integrated with LCG-2.x; no attempt to use same installation tools
 - WN installations should co-exist
 - Applications choose LCG-2 or gLite world for testing → no simple access to data of the other
- **Deploy gLite version 1.1 (out May 9th)**
 - Hotfixes and other bug fixes
 - Includes FTS
 - Need FTS also as a stand-alone package for other sites in SC3
- **NB:**
 - Full certification and pre-production service process is being bypassed
 - This process should still go on in parallel

- **Miscellaneous:**

- gLiteIO – security model will not allow data exchange with LCG-2 directly
 - Could have rfio access with correct user mapped from I/O server.
- R-GMA: not used as information service – stay with LCG-2 version for monitoring; do not worry about gLite version – brings no benefit
- BDII as information service – need to add for gLite “service”
- Still needs work on documentation, installation instructions
- Still need to fully validate co-existence of WN packages (cannot split farms!)
- Will publish current state of certification testing as part of deployment release
 - Expose understood state of the software
 - Should not be thought of as a “production service”

- **Timescale:**

- Will be deployed as a series of releases – starting as soon as gLite 1.1 can be checked for obvious problems – 2 weeks?

- **gLite Release 1.0 has been produced**
 - Being certified by LCG and tested by many others
 - WMS provides backward compatibility with LCG-2
 - Documentation available
 - Major components have a test suite used for every release
 - Release 1.1 containing FTS and secure catalog being tested
- **gLite 1.1 will be deployed “as is” together with LCG 2.4.0**
 - Within weeks
 - Certification and preproduction will still happen in parallel
 - Will leave production unaffected