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Enabling Grids for E-sciencE

SA1
All Activities Meeting
10th-11th March 2005

Ian Bird

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- **Address main comments related to your activity from the EU Review Q&A Note (attached to this agenda page)**
  - Present your 15 Months Plan, focusing on the changes required from the original TA and the Q&A Note
  - List all deliverables/milestones till end of the project clarifying purpose/contents when not obvious and highlighting what they believe to be key deliverables/milestones

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Issues & Comments from Review

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- **Issues**
  - Set up of VOs easily

  - LCG-2 vs gLite and backward compatibility
    - This must be part of the migration strategy and has been stated as such from the start

  - Platform support, meta-computing, co-scheduling, advance reservation, etc.
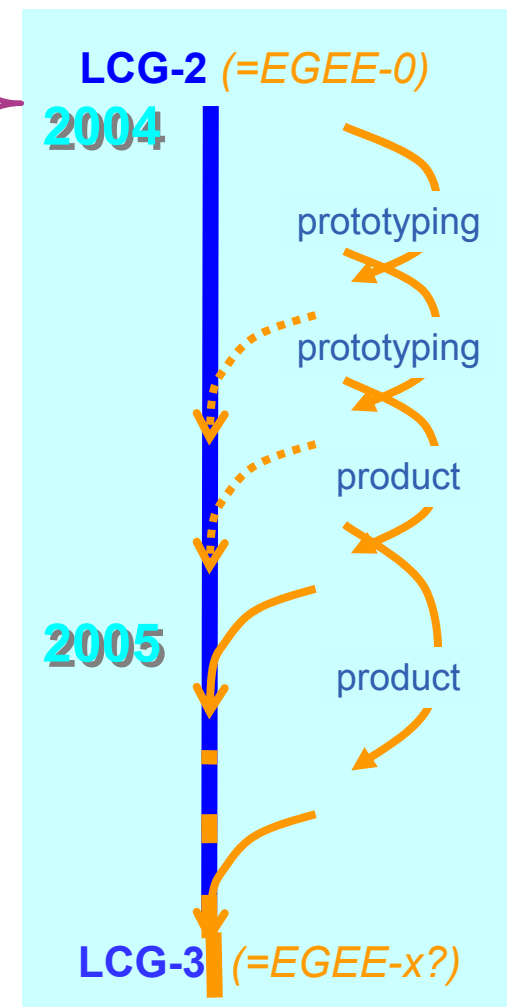   - …

Recommendations

- **Present a migration path to further reliance on open standards, not just on individual concrete implementations**
  - Not sure this is just an SA1 issue,

- **Consider gLite as a stepping stone to a standards-based infrastructure. Select additional components through collabs with other grid R&D initiatives**
  - OK – but need to see the need for "other" components. E.g. Condor based job submission to a gLite CE as alternative to WMS.

- **Clarify which components of gLite (JRA1??) as well as which established operational procedures are contributed to standards bodies**
  - Hope the cookbook can help with this

- **Continue to conduct app-driven … complex usage scenarios, and consider how to support them in a viable manner. … production level middleware from other projects that go beyond gLite features**
  - Service challenges, other application usage

- **Migration path to gLite …**
  - See later

- **(from JRA3) … stress tests of security infrastructure by planned attacks**
  - Planned walkthroughs, discuss with JRA3/JSPG about "Planned attacks"!

Migration to gLite
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- **Migration strategy**
  - Needs to be incremental rather than big-bang – as has been stated for a year

- **Identify core services**
  - Separate these from the others which may be migrated "independently"
  - Non-core:
    - R-GMA, VOMS
  - Core:
    - RB, CE, …, data management
  - No-equivalent:
    - LCG-BDII

LCG-2 *(=EGEE-0)*

2004

prototyping

prototyping

product

2005

product

LCG-3 *(=EGEE-x?)*

- **2 Activities in parallel:**
  - Get a working gLite installation on GD test-bed
  - Deploy components into LCG-2 certification test-bed and then to pre-production
    - Requires being able to take (sets of) components individually out of the gLite releases
- **PPS and Production**
  - Are evolutionary LCG-2 → gLite components
    - Requires maintaining current installation, configuration tools; gLite must be adapted to this environment, or tools evolve to handle both
- **Cannot provide LCG-2 end-of-life estimate/deadlines**
  - LCG-2 is the fallback solution
- **Some components still have to demonstrate acceptability to applications**
  - gLiteIO, FiReMan (and integration with POOL)

1) Certification test-bed

- Core functionality tested, some stress tests.
- Threshold for moving to pre-production:
  - Functionality of gLite at least that of LCG-2
  - The stability not worse than than (80)% of LCG2 on the same test-bed
  - Performance: The core functions (job submission, file reg., file lookup, file delete, data movement..) should not be less than (50)% of LCG-2

2) Pre-production

- Thresholds as for the certification test-bed.
- In addition: scalability testing.
- Applications: Overall perceived usability has to be comparable with LCG-2

3) Once thresholds achieved:

- LCG-2 is frozen,
  - except for security fixes.
  - No porting to new OS releases. This ensures that LCG-2 will be phased out with current version of OS

4) Introduction to Production:

- Major sites deploy gLite CEs in parallel with the LCG-2 CEs.
- WNs provide client libs for both stacks.
- Some of the smaller sites convert fully to gLite.
  - Incrementally, until (50)% of the resources are available through gLite.
  - Re-apply threshold tests as on pre-production (stricter?).

5) Final steps

- Migrate catalogues and data (if needed). Takes ~3 months.
- All smaller sites convert to gLite.
- Larger sites continue to provide access to LCG-2 data
  - However the LCG-2 SEs are made read-only to encourage migration of applications.

- ➤ **Keeps LCG-2 as viable fall-back**
- ➤ **Avoids having to state a drop-dead date for LCG-2 – but sets conditions**
- ➤ **Provides migration environment for applications**

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- **Testing and software packaging. Reinforce these even further**
  - SA1 heartily endorses this recommendation!
- **Work hard on event-based monitoring techniques, triggering preventive maintenance, to improve stability**
  - This is a crucial element of the work for the rest of the project
- **Improve the middleware deployment process (tech, org) even further to increase the stability of the infrastructure, improve job success rate, and reduce support load**
  - Connected with previous point, and with gLite migration plan
- **Implement a strong mechanism to quickly isolate unstable sites**
  - idem

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15 Month Plan

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- **Follow TA plan, no significant change to deliverables and milestones**
- **Focus is on points raised in review:**
  - Migration to gLite
  - Reliability and stability of the service
    - Follow recommendations of review discussed above
    - Improve monitoring systems – build reactive alarms
    - Site isolation – need simple mechanism (CIC tool) to remove sites
      - *Bad sites, security problems, etc.*
  - Deployment process
    - Software packaging –
      - *Ease of WN installation – this should be LIGHT*
  - User support
    - We should have a formal deliverable here (but I am not asking for one!)

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Deliverables & Milestones

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- **MSA1.3 (M14) Full production grid infrastructure operational**
  - Using integrated middleware release 1
  - 5 CICs (includes Russia)
  - 9 ROCs
  - 20 Resource Centres
- **MSA1.4 (M18) Second project review**
- **MSA1.5 (M24) Expanded production grid operational**
  - Using integrated middleware release 2
  - 5 CIC, 9 ROC
  - 50 Resource Centres

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- **DSA1.4 (M12) Assessment of operation of 1st 12 months**
  - Document assessing the achievement of the 1st year and the effectiveness of the organisation and the functionality, availability, and dependability of the deployed infrastructure.
  - Also includes a detailed plan for the second 12 months of deployment of centres
    - **This is largely irrelevant now as so many sites participate**
- **DSA1.5 (M14) First release of "cook-book"**
  - Foreseen as planning guides to assist new participants join or build components of the infrastructure.
    - Resource centres and their administrators
    - ROCs, CICs, and VOs
    - Templates and checklists to assist administrators to: design a facility, determine what resources to acquire, how to configure them, etc.
    - Detailed enough to allow admins to understand limitations of the system are and how to address them (e.g. what services can run on 1 machine, how to configure, etc.)
  - Make use of expertise of CICs, ROCs and staff in RCs ("and use technical writers in NA3")

- **DSA1.6 (M14) Release notes corresponding to MSA1.3**
  - Each milestone service release will be accompanied by release notes describing operation, limitations, and changes from previous release
    - NB. There are release notes as part of *all* releases
- **DSA1.7 (M22) Second edition of "cook-book"**
  - Update based on subsequent experience
- **DSA1.8 (M24) Assessment of production operation**
  - Assessment of 2nd year achievements, etc (as DSA1.4) – updated metrics etc to show improvement.
  - Include thoughts on how to make the infrastructure sustainable for the longer term
- **DSA1.9 (M24) Release notes corresponding to MSA1.5**