



Grid Service Deployment Proposal

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Services



- Certificate Authorities
- VO services
- Information Service
 - R-GMA with MDS as fall-back solution
- Replica Location Service
 - And replica management tools
- Storage Service
- Compute Element
- Resource Broker



Certificate Authorities



- Use national, regional, or community CA's
 - NOT an LCG responsibility
 - These mostly exist and are mutually accepting
 - Outstanding issues: Tokyo – needs to develop CP/CPS and follow agreement process; Taiwan – process under way; FNAL – KCA.
 - (more discussion in security talk)

- Need a “catch-all” CA for exceptions (emergencies, tests,...)
 - This should be the CERN CA – run by LCG deployment group
 - CERN CA also provides certs for CERN users

- Production use should be the national CA's and not the catch-all



VO Services



- LCG-1 VO:
 - Where all users register and sign AUP.
 - Run at CERN, by deployment group

- Experiment VO's (1 per experiment)
 - Proposal to use existing EDG services at Nikhef/CNAF in the short term (July)
 - At the moment all 4 experiments seem to use Nikhef but Atlas + CMS have used CNAF
 - Currently can only run 1 instance of the VO service (per VO)
 - Longer term VO management must be devolved to the experiment secretariats. More robust services must be developed.

- MyProxy service
 - Required by RB.
 - Must be under same administrative control as RB as it is highly trusted(!)
 - RB configuration not yet known – needs testing.



Information Services: R-GMA



- An IS instance is required at all LCG sites into which site information is published
 - Part of standard LCG installation

- Registry/look-up service is required
 - Current implementation of R-GMA (seems to) foresee only 1 instance – this is still to be tested

 - If we can run only 1 instance – CERN
 - When possible to run several – at least FNAL and Taipei in addition, prefer all Tier 1s



Information Services: MDS

Fall-back solution



- NB. We know that MDS has scalability problems
- Use a hierarchy as currently implemented in EDG:
 - GRIS: runs at every site – installed as part of standard LCG installation
 - Regional GIIS: Propose to run at each Tier 1 centre
 - Top-level GIIS: CERN (*+ US + Asia ?????*)



Replica Location Service



- Components
 - LRC: 1 per MSS site per VO
 - RLI: 1 per VO
 - ROS: 1 per VO
 - RMC: 1 per VO (not needed?)

- For July only LRC is implemented
 - With no RLI there can be only 1 instance (per VO) of the LRC

 - Propose to run these at CERN – implies moving all data to CERN(??)
 - Alternatively could run them at different Tier 1s for each VO
 - At CERN will run under Oracle

- Replica Management
 - These are client tools installed everywhere
 - Later will become a service



RLS - 2



➤ Longer term (with RLI):

- **LRC run at all sites with a grid-enabled MSS**
 - Run with Oracle DB+AS at all Tier 1s (license has been negotiated)
 - Mysql elsewhere

- **RLI: run 1 per VO at all Tier 1s**

- **ROS: run 1 instance at all sites**
 - Relies on WP7 network monitor:
 - run 1 daemon at all sites
 - Servers at Tier 1's

- **RMC: not needed (experiment db's map LFN to GUID)**



Storage Service



- Needs to run at all sites with a MSS
- MSS requires:
 - Grid and local access via SRM interface
 - Grid access via gridFTP server
 - Local access via rfio/dcap/local file system
 - Implemented GFAL
- In July:
 - Will have storage service at sites that have implemented this
 - CERN, FNAL, RAL
 - HPSS sites (Lyon, BNL, ???)



Compute Element



- Gateway to compute system
- All sites will run this – part of standard installation



Resource Broker



- New version completely untested – scalability unknown
- Need at least 1 per VO per Tier 1 – perhaps more