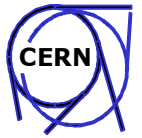

Grid Service Deployment
Proposal

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GDB

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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