http://cern.ch/arda

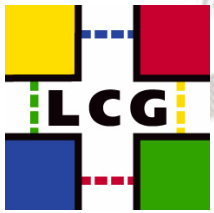
EGEE AA Meeting, 18 June 2004

"ARDA in a nutshell"

Massimo Lamanna / CERN

on behalf of the LCG-ARDA project

www.eu-egee.org



cern.ch/lcg

EGEE is a project funded by the European Union under contract IST-2003-508833

Contents

- ARDA in a nutshell
  - The project in a nutshell
  - Highlights from the 4 experiment prototypes
  - ARDA-related workshops
  - Conclusion

ARDA in a nutshell

- ARDA is an LCG project whose main activity is to enable LHC analysis on the grid
- ARDA is coherently contributing to EGEE NA4 (using the entire CERN NA4-HEP resource)
- Use the grid software as it matures (EGEE project)
  - ARDA should be the key player in the evolution from LCG2 to the EGEE infrastructure
  - Provide early and continuous feedback (guarantee the software is what experiments expect/need)
- Use the last years experience/components both from Grid projects (LCG, VDT, EDG) and experiments middleware/tools (Alien, Dirac, GAE, Octopus, Ganga, Dial,…)
  - Help in adapting/interfacing (direct help within the experiments)
  - Every experiment has different implementations of the standard services, but:
    - Used mainly in production environments
      - **Few expert users**
      - **Coordinated update and read actions**
  - ARDA
    - Interface with the EGEE middleware
    - Verify (help to evolve to) such components to analysis environments
      - **Many users (Robustness might be an issue)**
      - **Concurrent "read" actions (Performance will be more and more an**
- One prototype per experiment
    - A Common Application Layer might emerge in future
    - ARDA emphasis is to enable each of the experiment to do its job
- Provide a forum for discussion
  - Comparison on results/experience/ideas
  - Interaction with other projects
  - …

The experiment interfaces agree with the ARDA project leader the work plan and coordinate the activity on the experiment side (users)

LHCb

- The LHCb system within ARDA uses GANGA as main component.
- The LHCb/GANGA plans:
  - enable physicists (via GANGA) to analyse the data being produced during 2004 for their studies
  - It naturally matches the ARDA mandate
  - Deploy the prototype where the LHCb data will be the essential (CERN, RAL, …)
- At the beginning, the emphasis will be to validate the tool focusing on usability, validation of the splitting and merging functionality for users jobs
- DIRAC (LHCb production grid): convergence with GANGA / components / experience
- Grid activity:
  - Use of the Glite testbed (since May 18th)
  - Test jobs from Ganga to Glite ☺
- Other contributions:
  - GANGA interface to Condor (Job submission) and Condor DAGMAN for splitting/merging and error recovery
  - GANGA Release management and software process
  - LHCb Metadata catalogue tests
    - Performance tests
    - Collaborators in Taiwan (ARDA + local DB know-how on Oracle)

CMS

- The CMS system within ARDA is still under discussion
- Provide eas
  sharing) of
  key issue (D
  - RefDB is
    and stee
    phases
    some de
    - This
  - It contai
    except fi
    info rela
    system
  - The actu
    data to a
  - Measuri
    (similar
    Metadat
- Exploratory
  - ORCA j
  - Glite file

RefDB in CMS DC04

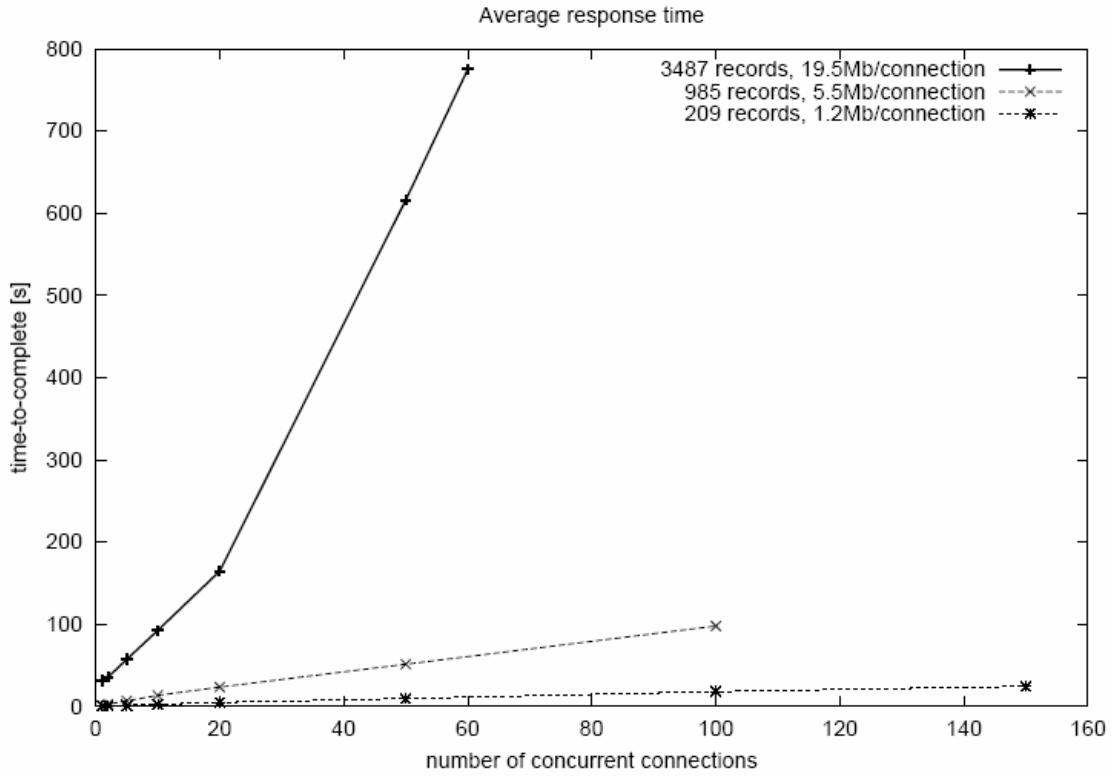
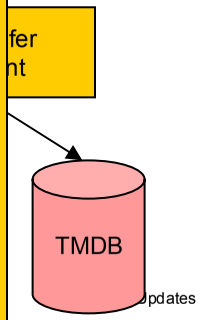


Figure 1: The average time-to-complete of a request presented as a function of the number of concurrent queries. The collections were discribed in the Table 1.



ATLAS

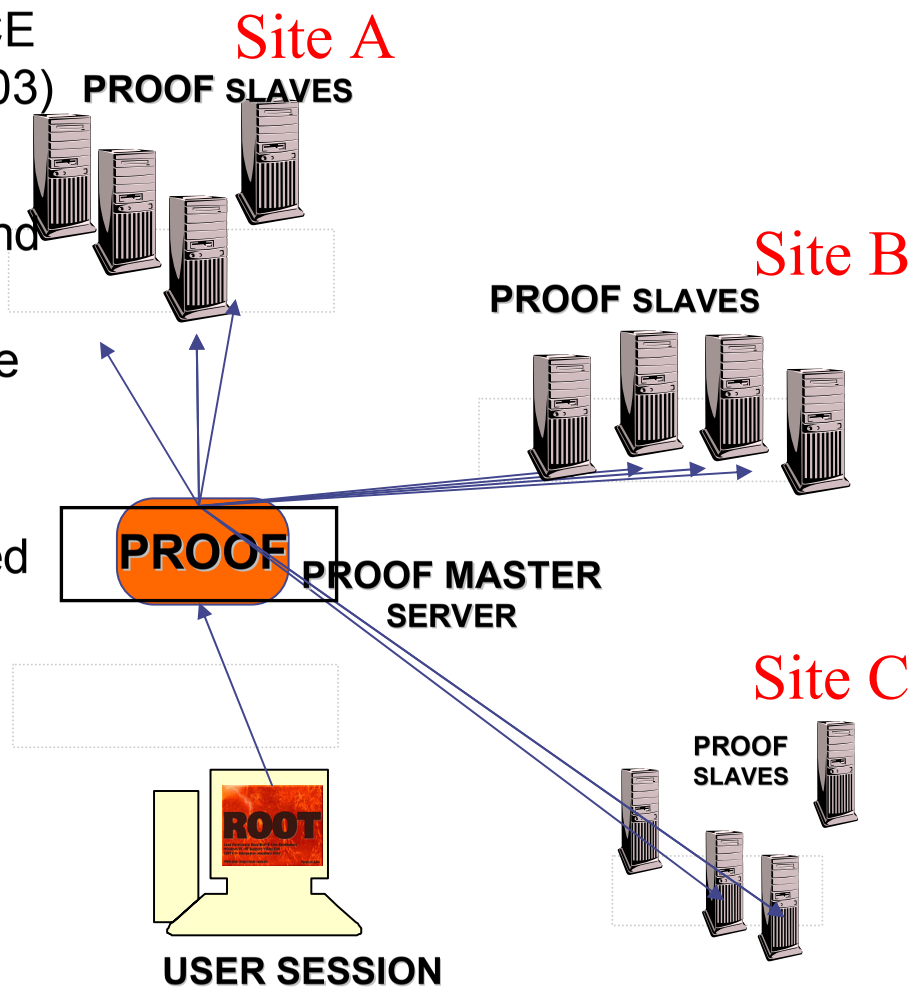
- The ATLAS system within ARDA has been agreed
  - ATLAS has a complex strategy for distributed analysis, addressing different area with specific projects (www.usatlas.bnl.gov/ADA)
  - Starting point is: DIAL analysis model (high level web services)
- The AMI metadata catalog is a key component
  - Robustness and performance tests from ARDA
  - Very good relationship with the ATLAS Grenoble group
  - Discussions on technology (EGEE JRA1 in the loop)
- In the start up phase, ARDA provided help in developing ATLAS production tools
- Submission to Glite (test jobs OK, Athena jobs still not possible)
- First skeleton of high level services

AMI Tests

	Rows in Response					
Clients	5	10	20	50	100	150
1	0.22	0.27	0.35	0.87	2.49	5.26
5	0.40	0.48	0.74	2.94	10.99	27.98
10	0.67	0.75	1.74	4.77	21.99	56.17
20	1.02	1.34	2.46	9.51	41.79	timeout
30	1.42	2.36	3.10	14.21	66.61	timeout
40	1.80	2.33	4.84	19.94	timeout	timeout
50	2.32	6.43	5.02	21.43	timeout	timeout
100	9.94	9.82	SOAP-Err	SOAP-Err		
150	16.51	SOAP-Err				

ALICE

- Strategy:
  - The ALICE/ARDA will evolve the ALICE analysis system (SuperComputing 2003)
- Where to improve:
  - Strong requests on networking (inbound connectivity)
  - Heavily connected with the middleware services
  - “Inflexible” configuration
  - No chance to use PROOF on federated grids like LCG in AliEn
  - User libraries distribution
- Activity on PROOF
  - Robustness and Error recovery
- Grid activity:
  - First contact with the Glite testbed
  - C++ access library on Glite



"The first 30 days of the EGEE middleware" ARDA workshop

- CERN: 21-23 of June 2004

- Monday, June 21
  - ARDA team / JRA1 team
  - ATLAS (Metadata database services for HEP experiments)
- Tuesday, June 22
  - LHCb (Experience in building Web Services for the Grid)
  - CMS (Data management)
- Wednesday, June 23
  - ALICE (Interactivity on the Grid)
  - Close out

"The first 30 days of the EGEE middleware" ARDA workshop

- Effectively, this is the 2nd workshop (January '04 workshop)
- Given the new situation:
  - Glite middleware becoming available
  - LCG ARDA project started
  - Experience + need of technical discussions
- New format:
  - "Small" (30 participants vs 150 in January)
  - To have it small, by invitation only…
  - ARDA team + experiments interfaces
  - EGEE Glite team (selected persons)
  - Experiments technical key persons
  - Technology experts
  - NA4/EGEE links (4 persons)
  - EGEE PTF chair
- Info on the web:
  - URL:http://lcg.web.cern.ch/LCG/peb/arda/LCG_ARDA_Workshops.htm

Workshop activity

- 1st ARDA workshop (January 2004 at CERN; open)
- 2nd ARDA workshop (June 21-23 at CERN; by invitation)
  - "The first 30 days of EGEE middleware"
- NA4 meeting mid July
  - NA4/JRA1 and NA4/SA1 sessions organised by M. Lamanna and F. Harris
- 3rd ARDA workshop (September 2004?; open)

Conclusions

- Up and running
- Since April the 1st (actually before of that) preparing the ground for the experiments prototype
  - Definition of the detailed programme of work
  - Contributions in the experiment-specific domain
- Playing with the Glite middleware
- This information will be discussed (and augmented) within the workshop activity
- Stay tuned ☺