



Enabling Grids for
E-science in Europe

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Experience from the biomedical VO on EGEE (LCG2)

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Introduction



- Aims:
 - Give the first feedback in deployment of a non-HEP Virtual Organization on the EGEE infrastructure
 - Give a list of steps to help other communities to deploy their own VO.
 - Raise open questions and propose ideas or clues to answer them.

What is a Virtual Organization ?

- A Virtual Organization is a group/community of people with a common centre of interest (scientific, industrial, economical, ...) with a centralised management and who want (need) to share some resources (data, algorithms, CPUs, storage, ...)
- Different points of view in the implementation according to the scientific community.
 - Physicists point of view: 1 VO = 1 HEP experiment.
 - One physicist is often active in only once, sometime two...
 - BioMed point of view: 1 VO = n projects
 - BioMed users could be present in many projects
 - BioMed projects duration ranges from 2 to 5 years...
- ⇒ BioMed (and I guess other) community need to have fine grain management of confidentiality, security, storage space,... at least by group inside a VO

Steps to deploy a VO

- VO shall be accepted into EGEE
- VO shall appoint a VO manager
- VO manager shall get in touch with CIC/ROC centres and define which of them will become the VO main CIC and which of them will become the secondary ones.
- VO manager shall find some Resource Centres which agree to commit resources to satisfy VO's goals
- VO members can start to work hard ! ☺

A well defined, structured and complete procedure is being finalised and discussed with SA1 for further information please contact Pierre Girard (pierre.girard@in2p3.fr)

NA4/SA1: brothers in arms

- We need to work in a very strong and close collaboration with SA1 because SA1 is responsible for VO implementation and deployment
- NA4 responsibility:
 - Appoint VO manager and deputy
 - Find / convince Resource Centres which agree to commit resources
 - Give agreement to SA1 to install/move core infrastructure services or to add new resource centres
- SA1 responsibility:
 - Install and manage all of the core infrastructure services
 - Transmit to the VO manager the list of resource centres which are ready to support it
 - Manage the deployment of the VO in all of the agreed resource centres

VO Manager, a key role

- (S)he is the majordomo of the Virtual Organisation and (s)he welcomes new comers. (S)he is responsible:
 - to check that users who requires integration into the VO really exist
 - and have satisfied all the mandatory steps BEFORE adding them to the VO
 - and all of this in a reasonable delay (from the user point of view...)
- As (s)he is known by each member, the VO manager is often the first information/contact point for questions, requests, to solve problems, ...
 - Necessity to act as an “internal resource broker”
- (S)he is the hook with SA1 to ensure the best VO deployment and to overview VO status
- (S)he shall keep up to date the list of sites compromising VO resources

Words of caution

- We are not victims but pioneers
- We are not here to criticize your job but to help you to improve the middleware/infrastructure we build together...
- I will mainly emphasize on problems but... nobody's perfect!
😊

Feedback from the BioMed VO (1/3)

- CC-IN2P3 agreed to play the role of the main centre for the BioMed VO and installed the LDAP server mandatory to set it up.
- CNAF agreed to configure a RB for the BioMed VO
- ⇒ some problems encountered with the LCFGng installation -> LCFGng overwrote configuration each night until RB profile was recompiled
- ⇒ time synchronisation problems between UI and RB generate non explicit error messages

```
Selected Virtual Organisation name (from --vo option): biomed
**** Error: API_NATIVE_ERROR ****
Error while calling the "NSClient::multi" native api
AuthenticationException: Failed to establish security context...
**** Error: UI_NO_NS_CONTACT ****
Unable to contact any Network Server
```

- ⇒ **Suggestion:** set up a service watching after all the mandatory services running on each machine type and able to start them again if they die.

Feedback from the BioMed VO (2/3)

- Each time the RB configuration was overwritten, the VO was paralysed
- ⇒ Necessity to (at least) duplicate core infrastructure services to avoid single point of failure. **Who is volunteer to set up a second RB?**
- ⇒ **Suggestion:** give access to chained core infrastructure services via a unique per VO logical name will improve the fault tolerance (i.e using a DNS service with a random or round trip service) and contribute to the load balancing between all the RBs

DNS system is very stable, “simple” to use but very powerful

Master:

```
biomed-rb -> biomed-rb.cc-in2p3.fr
biomed-rb -> biomed-rb.cnaf.it
biomed-rb -> biomed-rb.somewhere

biomed-bdii -> biomed-bdii.cc-in2p3.fr
biomed-bdii -> biomed-bdii.cnaf.it
biomed-bdii -> biomed-bdii.somewhere
...
```

Secondary:

```
biomed-rb -> biomed-rb.cc-in2p3.fr
biomed-rb -> biomed-rb.cnaf.it
biomed-rb -> biomed-rb.somewhere

biomed-bdii -> biomed-bdii.cc-in2p3.fr
biomed-bdii -> biomed-bdii.cnaf.it
biomed-bdii -> biomed-bdii.somewhere
...
```

Feedback from the BioMed VO (33)

- The Biomed VO has not yet any Replica Catalog available.
 - CC-IN2P3 plan to configure one in the short term
 - Any other site volunteer?
- ⇒ Up to now, setup of a new VO is very heavy and long for CICs
- ⇒ It could be very useful to create a package to help, at least, the main VO's CIC to install and configure all the required services with a minimum of efforts and in a reasonable delay (1 week?)

List of BioMed sites

- Present
 - CC-IN2P3
 - LDAP Server
 - 1 UI (world wide open)
 - 1CE + 23 dual proc. WN
 - 1SE (400 Gbytes)
 - CNAF
 - RB, BDII, ...
 - LPC-Clermont
 - 1 UI (restricted)
 - 1CE + 2 WN
 - 1 SE (60 Gbytes)
 - UPV
 - 1 CE + 2 WN
 - 1 SE
 - IBCP
 - 1 UI (restricted)
- Incoming
 - LPC-Clermont (end August)
 - 96 dual proc. WN
 - 1 SE (10 Tbytes)
 - UPV
 - 10 dual proc. WN (early September)
 - 1 RB (end of September)
 - IBCP
 - 1 CE + 6 dual proc. WN
 - 1 SE dual proc. (70 Gbytes)
 - CNB
 - 1CE + 8 dual proc. (end of August)
 - 1 RB (before the end of the year)
 - Israel
 - discussion pending with the SA1 South-East Federation representative with the support of the French SA1 CIC.

Conclusion

- Necessity of a strong and close collaboration between NA4/SA1
- Proposal for regular joint meetings between VO managers / CIC-ROCs Managers
 - Could it be the Organization Advisory Group mentioned in the Technical Annex?
- Who is in charge of making the decision to create a new VO?
- Need to have fine grain management of confidentiality, security, storage space,... at least by group inside a VO
- Feel free to contact me if you want/need more information on our feedback.