



Applications Working Group (Wp8, WP9, WP10)

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Applications Working Group

- ◆ Consists of representatives from each application workpackage (wp8, 9 10), chair: Vincent Breton.
- ◆ Members :
 - WP8: Jeff Templon, Frank Harris, JJ Blaising
 - WP9: Luigi Fusco, Cathy Boone, Wim Som de Cerff
 - WP10: Vincent Breton, Johan Montagnat, Nicolas Jacq
- ◆ Follow up of (A)TWG



AWG Goals

Goal:

- Inputs helping the definition of a Common Application Layer:
common application layer is a common set of generic high-level grid services

How to reach our goal?

- Gather the common needs and priority requirements of all applications based on testbed assessments to provide feedback to the middleware workpackages
- Use the work already done: TWG, requirements documents, use case documents, testbed evaluations, ATF, LCG...
- Produce milestone documents and provide them as input to ATF, MW workpackages and EGEE



AWG tasks:

- ◆ Task 0: **Joint list of recommendations**, based on the testbed 1.4 evaluation documents.
Finished and will be provided to the middleware workpackages
- ◆ Task 1: **Joint collection of requirements** from the testbed experiences and based on 6 use cases (2 from each workpackage). These use cases are described according the HEPCAL use case template.
Will be ready in June (PM30)
- ◆ Task 2 **Identification of services** relevant to a common application layer, based on the list of common requirements.
Will be ready in August (PM32)
- ◆ Task 3 **Description of services** relevant to a common application layer
Will be ready in December (PM36)



First result: Joint list of recommendations

Some notes:

- ◆ Recommendations mentioned here are relevant for all application workpackages
- ◆ Not all recommendations are mentioned here; please look at the draft document for a complete list.
- ◆ Recommendations with the highest priorities are listed on the next slides.
- ◆ Presented to ATF, which provided feedback on what will be in 2.0 release



Robustness

- ◆ **R2**: Improved fault detection and fault tolerance
- ◆ **R3**: Need highly robust and efficient WMS (negligible failure rate due to middleware)



Reliability and Scalability

- ◆ **RS1**: System must handle thousands of concurrent jobs
- ◆ **RS2**: Need to register millions of files
- ◆ **RS3**: Reliable file transfer. Must be able to transfer multi GB files with global reliability (~ 99%)



Security

- ◆ **S1**: Need to control file access right at the user name level (ACLs) and VO subgroup level, e.g. "LHCb production manager" which is a subgroup of "LHCb"
- ◆ **S4**: Need a comprehensive grid-security implementation (e.g. control access to VO data/resources by multiple user groups with different levels of privilege within the VO)
- ◆ **S6**: Outbound IP connectivity allowed from WNs.



Information System

- ◆ **ISO**: Absolutely vital to have an information system that scales with increasing size of TB and job requests
- ◆ **IS1**: Method for publishing and locating Resource Brokers available to the VO



API's and System environment

- ◆ **A1:** Need programmable APIs (in C, C++ and java) to interface programs with middleware services
- ◆ **A2:** Need uptodate system release support (redhat 7.3)



Data Management

- ◆ **DM5**: Need SE and CE(WN)space management
- ◆ **DM1**: Need easy grid file access from running application (gridopen / gridclose / gridread / gridwrite POSIX like interface)



Job handling

- ◆ **JB4**: Implementation of fast turnaround queues (i.e. for small, "interactive" jobs which require instant execution and near-real-time response)
- ◆ **JB2**: MPI support is needed for parallel applications (MPICH-G2 or fast connection MPI).



Summary

◆ **AWG will deliver:**

- Joint list of recommendations (available)
- Joint list of requirements (PM30)
- Identification of Services (PM32)
- Description of Services (PM36)

Contributing towards :

Definition of a Common Application Layer



Application Testbed

- ◆ **All three application work packages** need a common and on-going application testbed for
 - Production
 - Evaluation of evolving data processing models
 - Education of the applications communitieswith a well defined management

- ◆ **AWG expectations from EDG 2.0:** a **stable** environment supporting job submission, data management, mass storage.

- ◆ **Security**
 - VOMS deployed asap allowing definition of groups and subgroups
 - ACL implementation on Storage Element