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 Boonne, 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 requirments (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 communities

  with 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