Experiment Dashboard Current status and plans

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Main directions of work

- Development, deployment, maintenance and support of the Dashboard monitoring applications
- Collaboration with the middleware development teams, FTS developers , GridView in order to enable generic monitoring for data transfer, job processing and site availability on the WLCG scope
- Integration of the VO-specific monitoring systems aimed to provide high-level view of the LHC computing activities on the WLCG infrastructure
- Analysis of the collected monitoring data, data mining

Monitoring applications used by the LHC experiments

- Cover full range of the LHC offline computing activities: job processing, data transfer, site commissioning
- These applications are widely used, in particular by ATLAS and CMS.

  Example: CMS productions server served 3K unique visitors in August 2009, up to 100 K pages of the ATLAS DDM monitoring server are viewed daily.
- Main strategy – concentrate effort on the common applications which can be shared by all VOs.

  The applications which are VO-specific should be gradually taken over by the experiments .

Integration of ATLAS monitoring systems

- Coordinated by Ricardo Rocha
- Create a single monitoring application for job processing , aim for
- *use Panda DB as an information source*
- *Web application exposing this data*
- Integrate currently existing ATLAS monitoring systems:
  - *Standardize monitoring messages*
    - *Shared effort between all ATLAS Distributed Computing teams*
  - *Use HTTP for transport, JSON for data serialization*
    - *And publish messages to the messaging system for integration with operations*
  - *Develop a single client application*
    - *Using the Google Web Toolkit (GWT)*
  - *Develop thin layers to expose monitoring data*
    - *On top of existing services*
    - *Using the technology which better fits the existing service*

Generic applications. Job Monitoring

Should follow Grid and application status of user jobs

Current focus on:

- adapting for all VOs recent improvements done for CMS version of job monitoring
- migrate to ActiveMQ messaging
- provide common way for instrumentation of the VO workload management systems for publishing of the job monitoring information
- in collaboration with LB, CEMon, condor_g and GridView development teams enable publishing of the Grid job status information to ActiveMQ messaging system

Generic applications. Data transfer monitoring

Dashboard for FTS monitoring

- The first prototype using T0 export data will be ready for experts in the end of October
  - Finish widgets, review data messages
    - *... charts, treemap, ...*
    - *... integrate storage usage information*
- In the end of 2009 – beginning of 2010 should be available for general use, should include data from all FTS instances
- Future
  - Integrate VO specific information
    - *data subscriptions, file grouping (dataset)*

Generic applications for site monitoring

- **Site Status Board**

  In production for CMS, LHCb and Alice. Currently is actively used by CMS.

  Recent improvements – enabling of the historical numeric distributions

- **VO-specific site availability based on the results of SAM tests**

  Uses information from SAM DB. Includes interface for introducing new availabilities, stored Oracle procedures for availability calculations , some extensions to SAM schema, UI for exposing results of SAM tests and service/site availabilities.

  Will need to migrate to new SAM schema. Foresee support only for the UI, availability calculations will be provided by GridView.

Integration of VO-specific monitoring systems

- Coordinate an effort in order to provide high level view of the LHC computing activities on the WLCG infrastructure
- Development of the systems providing such view on the level of a single site, single VO or on the global WLCG level.
- Example of applications:

  Siteview, Experiment workflow map, GoogleEarth for LHC computing activities.
- VO-specific monitoring systems are used as an information source, GoogleEarth or GridMap for visualization, Dashboard framework as a glue to integrate all components in a single system

Summary

Dashboard provides to the user communities

- Development, maintenance and support of the Dashboard monitoring applications. Many of them are generic and can be used by any VO.
- Development and support of the Dashboard framework which is used outside Dashboard project, not necessary for the development of the monitoring applications
- Guidance in instrumentation of the VO-specific systems (for instance, workload management systems) for publishing of the monitoring data
- Integration of the VO-specific monitoring systems
- Contribution to the improvement of the overall WLCG monitoring infrastructure (FTS Dashboard, instrumentation of the GRID services for publishing of the job status information)