Comparison of European Grid Projects

Federico Crazzolara (NEC)

Project:

GEMSS

Area:

Logging Services

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1. Introduction

1.1. Objective and Structure

This document is one of thirteen templates that have common goal to gather information related to main European Grid Projects in order to make their accurate comparison in the framework of GRIDSTART initiative. We believe that the participation of particular projects members in preparation of this document will allow comparing all activities in a credible and exhaustive way.

The proposed structure of the description consists of two parts. The former is concerned with the general overview and architecture together with the contents of layers (the first template). The latter includes the main components of the Grid infrastructure (remaining 12 templates). Since information regarding the project architecture is to be quite general, more detailed description should be provided in the review of the main aspects of the Grid infrastructure. In order to prepare uniform description for each project, we identify the important issues that have to, should or can be included into particular components. Common issues for all components and these specific for this component are briefly described in the next section.

We ask you to proceed according to this schema. However, a feedback is obviously welcome. For some projects the document has been partially completed on the basis of descriptions found at the official web pages. In this case, we ask you to revise already filled in sections, correct and complete them if necessary.

You should take into consideration future plans while you fill in particular sections. Actually they are even more important then the current state of the project components. If you are not going to design some elements in the scope of the project at all, please, note it in the proper section.

1.2. Uniform description

All the descriptions of the Grid infrastructure components are divided into three parts: **General** section includes main requirements and functionality, **Details** section relates to the issues specific for particular component and **External** defines its connections with other components and users.

As it was mentioned above, some of the issues are common for all components or at least repeat for many of them. Such issues, appearing for many or even all areas are shortly characterized below.

In **General** section:

Main requirements determine the objectives and requirements of the workpackage or the software module responsible for the design of functionality related to the particular domain of the Grid infrastructure.

Functionality contains a set of operations provided by the project in the given area.

In **External** section:

Interfaces define services, SDKs, APIs and so forth which can be used in order to access the functionality of the component.

Low level Grid middleware is the middleware providing basic Grid functionality as for example Globus or UNICORE.

Relations with other components determine components that utilize or are utilized by component being described as well as data and information flow between them.

Issues that are specific for this particular domain of the Grid infrastructure are presented in the sequel. Some of them, which we consider to be clear, have been skipped, however, if they turn out to be vague, please, contact the authors of this document (ariel@man.poznan.pl).

The **Details** section is concerned with all functionality within the grid project that allows recording events for a future use.

Details in **Information included in logs** section may consist of logs such as program or system faults, submitted jobs, resource requirements and so forth.

Methods for logs storage define formats of storage such as ASCII files or relational databases and schemas defining the structure of this information.

2. Logging Services

2.1. General

This document presents a snapshot of current developments. The GEMSS design is still being discussed by the project and not all issues have been finalized yet.

- **Main requirements**

  Gemss provides external practitioners with medical simulation services. Events that occur when Gemss services and resources are accessed need to be monitored and logged for a variety of purposes. In Gemss logging will be used for both accounting purposes and as building block of a Gemss intrusion detection (ID) system. Logs should be accessible only by authorized processes. They should be generated and stored with high performance, especially ID logs.

- **Functionality**

  i. Collect logs from a number of sensors
  ii. Record events in an event archive
  iii. Interact with a monitoring and ID service

2.2. Details

- **Information included in logs**

  Static

  Auditable information, such as agreed contracts.

  Dynamic (updated during job execution time).

  Within the Gemss environment loggers collect alerts of events dynamically at several points in the system to monitor when and how a service is accessed. The log archive is receiving a stream of events and is continuously updated. For ID logs good performance is critical for prompt detection of intrusions.

Details

System and library calls as well as application specific alerts are logged for ID purposes.
Auditable information is logged for accounting purposes.

- **Methods for logs storage**

  A relational database to keep accounting data
  A high-performance storage for ID events

- **Usage of recorded logs**

  Accounting and billing
  Intrusion detection

2.3.External

- **Interfaces**

  To sensors for collecting alerts
  To event consumers for sending event streams

- **Relations with other components**