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CREAM Functional Description

The CREAM (Computing Resource Execution And Management) Service is a simple, lightweight service that implements all the operations at the Computing Element (CE) level; its well-defined WebService-based interface and its implementation as an extension of the Java-Axis servlet (running inside the Apache Tomcat container) provide interoperability with clients written in any programming language and running on any computer platform.

The CREAM interface is well-defined using the Web Service Description Language (WSDL); anyone can generate his/her CREAM client by simply filling in the stub code generated by WSDL parser (gSOAP for C/C++, Axis for Java, Perl module for perl).

CREAM functionality:

- Job Submission
 - ◆ Possibility of direct staging of input sandbox files
 - ◆ gLite JDL compliance (with CREAM-specific extensions)
 - ◆ Support for batch and parallel jobs
- Manual and automatic proxy delegation
- Job Cancellation
- Job Info with configurable level of verbosity and filtering based on submission time and/or job status
- Job List
- Job Suspension and Resume
- Job output retrieval
- Job Purge for terminated jobs
- Possibility (for admin) to disable new submissions
- Self limiting CREAM behavior
 - ◆ CREAM is able to protect itself if the load, memory usage, etc. is too high. This happens disabling new job submissions, while the other commands are still allowed
- ARGUS or gJAF based authorization
- Possibility to forward requirements to the batch system
- Integration with APEL and DGAS accounting systems

CREAM can be used

- by the Workload Management System (WMS), via the ICE (Interface to CREAM Environment) service
- by a generic client, e.g. an end-user willing to directly submit jobs to a CREAM CE. A C++ command line interface (CLI) is available

-- MassimoSgaravatto - 2011-04-18

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