

SAGA API for gLite Service Discovery

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The API returns a list of service descriptors matching search criteria. A random choice can then be made from the URLs returned. Information about the individual services can be obtained from the descriptors if it is desired to rank the services returned or produce a web page of some subset of services. The search criteria are specified by means of three filters – service, VO and data. The service filter selects on the basis of some GLUE attributes such as the “type” of service. The VO filter allows the user to select from those services he is allowed to use and the data filter makes use of a GLUE feature of key/value pairs associated with each service. SAGA components have a “plugin” architecture. In the case of Service Discovery, a plugin is required for each underlying information system; so far we have R-GMA and BDII support in C++.

3. Impact

The existing gLite Service Discovery API is being used by components of the Workload Management System (WMS) and Data Management Systems. The Logging and Bookkeeping service developers have expressed an interest in using the new SAGA API because of the extra functionality it offers. The SAGA approach is useful from a user perspective because it frees end users from dependency upon specific Grid middleware. We expect that the use of SAGA will grow making the interface increasingly valuable. The SAGA Service Discovery API has been designed to be very easy to use with SQL style filter expressions. It also means that services that use other services require less error-prone configuration as they can find the actual services when they need them. This in turn leads to increased reliability.

URL for further information:

<http://forge.ogf.org/sf/go/doc14875?nav=1>
<http://hepunix.rl.ac.uk/egee/jra1-uk/index.html>

4. Conclusions / Future plans

The SAGA based Service Discovery C++ API supporting SQL style filters has been implemented within gLite. We provide a C wrapper that is compatible with the old gLite API however this is mainly useful for testing to check that the returned set of services is the same. In future we will provide Python and C wrappers and a Java implementation. The wrappers avoid the need for rewriting the plugins. JNI will be considered for a Java wrapper as a short term solution.

Provide a set of generic keywords that define your contribution (e.g. Data Management, Workflows, High Energy Physics)

grid, API, SAGA, OGF

1. Short overview

The Simple API for Grid Applications (SAGA) from the Open Grid Forum (OGF) defines standard APIs to allow grid applications to be middleware independent. We have contributed a Service Discovery specification to SAGA and an implementation as a generalisation of the existing gLite component. The purpose of service discovery is to locate services based on various characteristics. The API supports a very general selection mechanism and is built on the GLUE notion of a service.

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