Contribution ID: **105** Type: **Poster**

Programming gLite without an UI - a JavaGAT adaptor for gLite

Monday 12 April 2010 18:24 (3 minutes)

Programming in the EGEE Grid with gLite currently requires a large toolchain of software, which is installed on UI machines. It is often difficult, if not impossible, to install the full gLite software stack on development machines or on deployment machines, e.g. for web portals.

We present a generic adapter for programming gLite which is independent from the gLite software stack and from UI machines. It can be used on any machine providing the Java Runtime Environment. It provides an API compatible with JavaGAT, the standard for Grid programming.

Detailed analysis

When trying to program software for the Grid, application developers are usually faced with the problem that there exist several APIs for Grid programming. Each Grid middleware demands its own software stack, which is incompatible with the software stack and API of other Grids. This problem will increase in the Future, as the current EGI proposal defines Unicore, ARC, and gLite as possible middlewares to be used.

To overcome this problem, a standard API for Grid Programming, GAT, has been introduced. In particular, bindings for Java are published under the term JavaGAT. Until recently, however, there was no functioning implementation for gLite available in JavaGAT.

The main reason for the lack of gLite support was the dependency of the full gLite software stack in the public available API. Software accessing gLite would have to be run on a machine which has gLite installed, which in most cases meant a special User Interface machine.

We present a working JavaGAT adaptor for gLite which is independent of the gLite software stack. It only uses the public APIs of the gLite services, and as such can be run on any machine providing the Java Runtime Environment.

Conclusions and Future Work

The adapter presented here is included in the JavaGAT distribution. It is currently in use in several projects, ranging from workflow management systems to Grid portals. It has been tested and verified in the EGEE Grid, and it is ready to be used by more Grid application developers.

In the future, we plan to maintain and enhance the gLite adaptor. We plan further bug fixes and enhancements, and hope to provide the best independent API for programming the gLite Grid.

Impact

With the adapter presented here, we broaden the access to gLite. Programming gLite no longer means having to use a specific operating system with special software installed. Application development can now happen on laptops, desktops, and existing servers. We also support different operating systems. Whereas the original gLite software API is only available for Linux, our adaptor also works on other OSes, such as Mac OS X or Windows. This also means that developers can write Grid applications which work under these OSes, and therefore broaden the range of available users.

Second, the adapter confirms to a standard interface currently widely in use for Grid programming. This means that applications currently written for this standard can be adapted for gLite easily. This enables Grid application developers to support multi-Grid operation, and also to switch from other Grid systems to gLite at their leisure.

Keywords

gLite programming JavaGAT

URL for further information

http://gforge.cs.vu.nl/gf/project/javagat

Author: Dr BERGER, Maximilian (University of Innbruck)

Co-author: Mr ZANGERL, Thomas (KTH)

Presenter: Mr ZANGERL, Thomas (KTH)

Session Classification: Poster session

Track Classification: Software services exploiting and/or extending grid middleware (gLite, ARC, UNICORE etc)