Software
Licensing

DIET, a GridRPC middleware for the port of applications on distributed resources and cloud computing solutions

In the face of resources proliferation (supercomputers, millions of PC and work stations, resources sharing, etc.) and applications growing complexity (multi-scale, multi-disciplinary, heterogeneity, huge data volumes, etc.), cloud computing is very much in demand. DIET offers a toolbox for deploying application services providers with a hierarchical architecture for scalability.

Advantages / Novelty

DIET offers powerful features such as:
* Plug-in Schedulers. They can adapt the selection of the best service providers inside DIET according to the applications specifications in order to be the most efficient.
* Workflow management. A large number application process can be modelled by a graph of tasks. DIET will manage the execution for you and this will result in an efficient use of your computing resources by dispatching these tasks on them transparently.
* Data management-scheduler interactions. DAGDA is a new data manager for the DIET middleware which allows data explicit or implicit replications and advanced data management on the grid.

Intellectual property

The software has been registered at the APP.

Applications

Bioinformatics
Cosmology (Project DAPNIA/CEA)
Climate modelling (CERFACS)
Aeronautics (fluid mechanics simulation)
Car technologies (simulation)

Research team

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Detailed description

DIET (Distributed Interactive Engineering Toolbox) consists of a set of elements that can be used together to build applications using the GridRPC paradigm, standard from the OGF. This middleware is able to find an appropriate server according to the information given in the client's request (problem to be solved, size of the data involved), the performance of the target platform (server load, available memory, communication performance) and the local availability of data stored during previous computations (restricted on their number of workunits on the grid).

Current stage of development

The most famous use cases of DIET is the Decrypthon grid. The Decrypthon Program was launched in 2001 by the AFM (The French Muscular Dystrophy Association), IBM, and the CNRS (The French National Centre for Scientific Research). Its goal: to speed up proteomics and genomics research using Grid Computing technology.

Documentation

http://graal.ens-lyon.fr/DIET

Collaboration type

Partners would be of different types:
- companies needing software for porting their computer intensive application on their own distributed computing resources, or on existing cloud computing offers available on the web.
- companies needing expertise for allowing an efficient use of their distributed computing resources for their applications
- research teams for collaboration
- investors

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