IANOS, the Intelligent Application-Oriented Scheduling framework is a Grid scheduling system, which provides a generic job submission framework for optimal positioning and scheduling of HPC applications. IANOS' inherent negotiation framework uses for that purpose standard Service Level Agreements.

Furthermore, IANOS provides:
- An intuitive job specification and submission interface
- Brokerage and resource selection capabilities
- WS-Agreement-based negotiation using the MetaScheduling Service
- Standards-based service-oriented Grid software

IANOS solves the non-trivial problem of scheduling applications within a Grid of HPC machines through a novel approach of combined cost and execution time evaluation based on job requirements, application and resource characteristics, as well as historical data. These algorithms are the backbone of a service-based framework that automatically finds best-suited resources for a certain application request and negotiates the specific QoS demands with the respective resource providers. Two models are used: the Cost Function model and the Execution Time Evaluation model. They are based on a parametrisation of the applications and the resources. The Cost Function model calculates the cost value for each candidate resource. The Execution Time Evaluation model forecasts the execution time of a given application on a given resource, a prediction based on the knowledge about the CPU node performance of the applications.
Meeting IANOS

École Polytechnique Fédérale de Lausanne, Switzerland

July 21st and 22nd, 2008


Hotel Information: www.lausanne-tourisme.ch

Download Agenda: Agenda21-22-July-2008-2-1.doc (DOC, 125 KB)

Agenda

Monday, 21st July 2008

Current IANOS version Demo & Internals

13:00 – 13:15 Welcome (R. Gruber, EPFL)
13:15 – 13:45 IANOS internals (V. Keller, EPFL)
13:45 – 14:15 a title (O. Wäldrich, FhG)
14:15 – 14:45 IANOS demo (H. Rasheed, FhG – CoreGRID fellow)
14:45 – 15:00 Coffee Break

Towards future: current partners (FhG, EIA-Fr, CSCS, and TU Dortmund)

15:30 – 16:00 a title (W. Ziegler, FhG)
16:00 – 16:30 a title (R. Yahyapour, TU Dortmund)
16:30 – 17:00 Quo vadis IANOS? - The future from a research perspective (P. Wieder, TU Dortmund)
17:00 – 17:30 CSCS contribution (P. Kunszt, CSCS)
17:00 – 18:00 Discussion

Evening: Social Event

Tuesday, 22nd July 2008

Invited speakers (20 minutes each): INRIA, PSNC, FZI, Uni Zürich, SWITCH, ORNL

08:30 – 08:50 DIET: Scalable Scheduling for GridRPC applications (F. Desprez)
08:50 – 09:10 What PSNC could bring in the Project (A. Oleksiak)
09:10 – 09:30  a title (T. Lippert, FzJ)
09:30 – 09:50  a title (W. Sudholt, Uni Zürich)
09:00 – 09:30  a title if needed
09:30 – 09:50  a title (K. D'Mellow, EPCC-DEISA)
09:50 – 10:10  Coffee Break

Towards a new European Project with more partners

10:10 – 11:10  Discussion / Collaboration
11:10 – 12:10  Discussion : IANOS : Future within new European Project. Who?
12:30  End

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Intelligent Application-oriented Scheduling for HPC Grids with IANOS

Developed by:

- Centro Svizzero di Calcolo Scientifico
  Switzerland
- Dortmund University of Technology
  Germany
- Ecole Polytechnique Fédérale de Lausanne
  Switzerland Fraunhofer
- institute SCAI Germany

Contacts:

- Ralf Gruber
  Ralf.Gruber(at)epfl.ch
- Wolfgang Ziegler
  Wolfgang.Ziegler(at)scai.fraunhofer.de

Publishing Notes

The Fraunhofer Institute for Algorithms and Scientific Computing SCAI
Schloss Birlinghoven
53754 Sankt Augustin
Germany

Phone +49 2241 14-2500
Fax +49 2241 14-2460
http://www.scai.fraunhofer.de
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Fraunhofer-Gesellschaft
zur Förderung der angewandten Forschung e.V.
Hansastraße 27 c
80686 München
Germany
Phone: +49 89 1205- 0
Fax: +49 89 1205-7531
www.fraunhofer.de

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Diplom-Journalist Michael Krapp
michael.krapp(at)scai.fraunhofer.de
Phone +49 2241 14-2935

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