

UBIVERTEX - Letter of Intention

Institute/Company INRIA – I3S - CNRS

Name: Modalis

Country: France

Activity domain: Computer Science

Number of employees: ☐ <50 ☒ <250 ☐ > 500

Name of the department/research team: Modalis

Scientific contact

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Challenge descriptions:

Resource virtualization largely adopted in Cloud infrastructure and IT service providers has a significant impact on computation performance and resource usage efficiency. The pay-per-use paradigm adopted by Cloud providers makes it necessary for Distributed Computing Infrastructure users to tune their computations in order to optimize their cost with regard to the performance achieved. In addition, virtualization overheads (related to system, network and storage virtualization) have an impact of raw computation performance. The Modalis research team at I3S is working on data-driven workflow programming models for designing data-intensive distributed applications. The computations abstraction provided by the model is used to estimate the cost-performance function of workflow-based applications. Such models are useful for users to take decisions on the scale and cost of experiments planned, as well as for systems to optimize the amount of resources allocated for a specific computing request. The UBIVERTEX platform will be used to validate and consolidate the performance models developed using real large-scale applications. Early experiments could be ran on small parts of the previous Grid'5000 platform specially configured to support both system and network virtualization.

Type of commitment (internship, Phd grant, engineering staff):

Number of persons involved in these challenges: 5

Signature of
Scientific Contact:



Date: 9 septembre 2011

Signature of the
Legal Representative:

Date: