

UBIVERTEX - Letter of Intention

Project

Name: Contrail European integrated project (IP) funded under FP7

Country: France (coordination), Germany, The Netherlands, UK, Slovenia,
Italy

Activity domain: Research and development in cloud computing

Number of employees: x <50 <250 > 500

Name of the department/research team: <http://www.contrail-project.eu>

Scientific contact

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Challenge descriptions:

The Contrail Project is a major European project, partially funded by the Seventh Framework Programme IST of the European Commission under Grant Agreement FP7-ICT-257438. The goal of the Contrail Project is to design, implement, evaluate and promote an open source system for Cloud Federations.

The main contribution of CONTRAIL is the development of an integrated approach to virtualization, offering Infrastructure as a Service (IaaS), services for federating IaaS Clouds, and Platform as a Service (PaaS) on top of federated Clouds. This service stack will be part of the CONTRAIL open source system, facilitating industrial up-take of Cloud computing. The main outputs of CONTRAIL are a collection of infrastructure services offering network, computation and storage as a service; services to federate IaaS Clouds; a set of high level services and runtime environments for typical Cloud applications, including efficient map/reduce, scalable service-oriented application hosting, and automatic workflow execution; and a set of applications and use cases from the domains of e-business, e-science, telecommunication and media using and demonstrating the CONTRAIL system. CONTRAIL leverages the open source XtreamOS system (<http://www.xtreemos.eu>), developed in the successful XtreamOS European integrated project and which was designed for large scale dynamic infrastructures. XtreamOS integrates services for data, application, security and community management that can be adapted to provide a unified solution for building private, public and federated Cloud infrastructure.

In Contrail, one of our challenges is to evaluate the developed software on large-scale computing infrastructures spanning multiple sites (cloud federations). For doing these experiments, we need a highly configurable platform from the OS level up to the application level.

In the previous XtremOS project, the partners have extensively used the Grid'5000 experimentation platform. Several publications have presented the results obtained and the software could be improved thanks to the large-scale experiments we could carry out. We have very similar needs in CONTRAIL and the UBIVERTEX project would provide CONTRAIL partners a very valuable platform to validate our software and also lead to high quality publications, as experimental results are outstanding to publish in the best system conferences.

The academic CONTRAIL partners are STFC (UK), CNR (Italy), ZIB (Germany), INRIA (France), VU Amsterdam (The Netherlands). Industrial partners are HP and TISCALI both in Italy. Four SME are also involved XLAB (Slovenia), EBM Web Sourcing (France), GENIAS (The Netherlands) and CONSTELLATION (UK). All academic partners and XLAB have already used GRID'5000 and are strongly interested in using UBIVERTEX. HP is likely to carry out experiments with such a platform as well as they directly contribute to the CONTRAIL software development. It is however difficult to provide accurate numbers concerning the staff involved. Numbers provided below are estimated to the best of our knowledge.

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

10 interns, at least 10 PhD students or post-docs, up to 10 engineering staff.

Number of persons involved in these challenges: More than 30 persons contribute to CONTRAIL project from a scientific and technical point of view (not including interns and administrative staff).

Signature of
Scientific Contact:

Signature of the
project coordinator



Date: September, 7th, 2011