

R&D Engineer Position in Computer Science

Evaluation of an open source software stack for cloud federations with applications

Place of work

Centre de Recherche INRIA Rennes – Bretagne Atlantique

Campus universitaire de Beaulieu

Avenue du Général Leclerc

35042 RENNES Cedex – France

Theme: Networks, systems and services, distributed computing

Project-team: Myriads (<http://www.irisa.fr/myriads>)

Contract duration: fixed-term contract of 12 months (renewal until September 2013)

Starting date: as soon as possible in 2012

Profile

Master or engineering degree in Computer Science, PhD in Computer Science

Environment and context

This position is proposed in the framework of the European Contrail Integrated Project (<http://www.contrail-project.eu>), supported by the FP7 IST Programme. Contrail project aims at designing, implementing, evaluating and promoting an open source system in which resources that belong to different operators are integrated into a single homogeneous Federated Cloud that users can access seamlessly. INRIA is the project coordinator. The consortium is composed of 11 industrial and academic partners from 6 different countries.

The engineer will be a member of the Myriads project-team at INRIA Rennes – Bretagne Atlantique research center. The objective of Myriads is to design and implement systems and environments for autonomous service and resource management in distributed virtualized infrastructures.

The engineer will interact with researchers, PhD students and engineers working on the design and implementation of distributed operating systems for federations of virtualized infrastructures within our Myriads research team. (S)he will also collaborate with industrial and academic partners of the Contrail consortium for the development and experimentation of the system.

The job includes trips, mainly in Europe, for technical meetings and dissemination of the project results.

Mission

The engineer will participate in the following R&D activities under the responsibility of INRIA within the Contrail project, in collaboration with other project partners:

- Analysis, design, and implementation of benchmarks for cloud computing software evaluation,
- Test and evaluation of the Contrail software stack for cloud federations integrating IaaS and PaaS layers,

- Development of tools to automatically deploy Contrail software on Grid'5000 experimentation platform (<https://www.grid5000.fr/>) for testing purpose,
- Providing support to port and experiment use cases (Internet services and scientific applications) from Contrail project and from Myriads team's partners not involved in Contrail consortium,
- Providing support to the open source user community.

The engineer will contribute to the edition of documents (installation manual, user manual and reference documents) and participate in the production of any Contrail material (deliverables, reports and prototypes). (S)he will take part in technical meetings and in software promotion activities (demos, posters and tutorials).

Contrail components are developed in Java, Python, Ruby; the Contrail API is mainly RESTful. The experimentations will be carried out on the Grid'5000 experimental platform, composed of clusters geographically distributed on 9 sites in France.

Skills and expertise

Required:

- Good knowledge in the design and implementation of the distributed systems,
- Good knowledge in virtualization technologies (eg. KVM, Xen),
- Good knowledge in Java, Python and Ruby programming languages,
- Fluency in English (read, written, spoken) required. The working language of Contrail project is English. Interviews for this position will be conducted in English.
- Ability to build relationships and to work in team, cooperative attitude,
- Ability to adopt methods, tools and processes which facilitate teamwork,
- Rigor, autonomy, organizational skills,
- Ability to accept the challenge of this work.

Appreciated:

- Good knowledge of REST architecture,
- Good knowledge in Linux OS,
- Good writing ability.

A first professional experience, an internship or school project requiring skills in distributed systems development will be very much appreciated. Experience in open source software projects would be appreciated.

Application

Applicants should send their application file including a motivation letter, a full resume, and up to five reference letters to contrail-job@inria.fr.

Application deadline: January 30, 2012

Contact for more information:

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