Jonathan Pastor

Ph.D thesis

title — *Contributions to massively distributed Cloud Computing infrastructures.*

supervisors — Frédéric Desprez and Adrien Lebre

defense — October 2016

Education

2012–2016 **Ph.D, Computer Science**, *ASCOLA - Lina - Inria*, Nantes, .
Designed a prototype of a fully distributed OpenStack manager leveraging Redis. This prototype has been presented during the OpenStack summit (Austin, 2016).

2009–2012 **Master of Science, Computer Science**, *Ecole des Mines de Nantes*, Nantes, *Engineering degree*.

2009–2012 **Bachelor, Computer Science**, *Université de Nantes*, Nantes, .

Professional Experience

Research

August 2017–July 2018 **Research Software Engineer**, *Stack team*, IMT Atlantique.
Implementation of SeDuCe, a testbed for the power and thermal profiling of datacenters. Meanwhile I was also engineer on the Grid'5000 testbed, in charge of the clusters located in Nantes.

February 2016–December 2016 **Research Software Developer**, *Nimbus team*, University of Chicago/Argonne National Laboratory.
Worked on the implementation of the Chameleon infrastructure and on a software that manages the lifecycle of clusterized software deployed on academic cloud computing infrastructures.

October 2012–October 2016 **Ph.D thesis**, *ASCOLA*, Nantes.
Contributions to massively distributed Cloud Computing infrastructures.

Internships

February–August2012 **Research internship**, *ASCOLA*, Nantes.
Participation to the development of a Chemical Programming research project.

May–August 2011 **Javascript/ActionScript development**, *Accenture*, Riga (Latvia).

July 2010 **Worker on Mainframes assembly-lines**, *IBM*, Montpellier.

July 2009 **Javascript/XUL development**, *Carra-consulting*, Nantes.

Computer skills

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Systems	OpenStack (Nova, Ironic and Blazar), Grid'5000, UNIX, Redis, MySQL
Programming languages	Python, Shell, Java, Scala/Akka, Arduino, C/C++, R language Web programming

Languages

French	Native	English	Professional
German	Scholar	Spanish	Basics

Research activity

Awards

June 2014 **Grid'5000 large scale challenge**, *1st prize*, Grid'5000 Spring School 2014, Ecole normale supérieure de Lyon.
The experiment conducted with Laurent Pouilloux got the first prize at the large scale challenge. During this experiment we used DVMS and the Vivaldi algorithm to deploy and schedule 1700 VMs over a multi-site infrastructure.

Research Interests

Cloud Computing	Geographically distributed OpenStack, Cloud Computing infrastructures.
Distributed computing	Internet of things, Distributed algorithms, concurrency, fault-tolerance.

Publications

Journal

[1] Adrien Lebre et al. "Putting the Next 500 VM Placement Algorithms to the Acid Test". In : *IEEE Transactions on Parallel and Distributed Systems* (2018).

[7] Adrien Lèbre et al. "Beyond The Clouds, How Should Next Generation Utility Computing Infrastructures Be Designed ?" In : *Cloud Computing : Challenges, Limitations and R&D Solutions*. Sous la dir. de Zaigham Mahmood. Springer, nov. 2014. URL : https://hal.inria.fr/hal-01067888.

International conferences

[2] Adrien Lebre et al. "Revising OpenStack to Operate Fog/Edge Computing infrastructures". In : *IEEE International Conference on Cloud Engineering*. Vancouver, Canada, avr. 2017. URL : https://hal.inria.fr/hal-01273427.

[3] Kate Keahey, Jonathan Pastor et Maverick. Chardet. "Publishing Platform for Geospatial Operations". In : *The Third International Conference on CyberGIS and Geospatial Data Science*. Urbana, United States of America, août 2016. URL : http://cybergis.illinois.edu/events/cybergis16/home.

[4] Adrien Lebre, Jonathan Pastor et Mario Südholt. "VMPlaceS : A Generic Tool to Investigate and Compare VM Placement Algorithms". In : *Europar 2015*. Vienne, Austria, août 2015. URL : https://hal.inria.fr/hal-01159033.

[6] Jonathan Pastor. "Vers un gestionnaire IaaS massivement distribuée s'appuyant sur OpenStack". In : *Conférence d'informatique en Parallélisme, Architecture et Système*. Lille, France, juil. 2015.

[8] Jonathan PASTOR et al. "Locality-aware Cooperation for VM Scheduling in Distributed Clouds". In : *Euro-Par 2014*. Porto, Portugal, août 2014. URL : https://hal.inria.fr/hal-00991530.

[10] Flavien QUESNEL et al. "Advanced Validation of the DVMS Approach to Fully Distributed VM Scheduling". In : *ISPA' 13 : The 11th IEEE International Symposium on Parallel and Distributed Processing with Applications*. Melbourne, Australia, juil. 2013. URL : https://hal.inria.fr/hal-00817369.

Reports

[5] Adrien LÈBRE, Jonathan PASTOR et . THE DISCOVERY CONSORTIUM. *The DISCOVERY Initiative - Overcoming Major Limitations of Traditional Server-Centric Clouds by Operating Massively Distributed IaaS Facilities*. Research Report RR-8779. Inria Rennes Bretagne Atlantique, sept. 2015, p. 12. URL : https://hal.inria.fr/hal-01203648.

[9] Adrien LÈBRE et al. *Beyond The Cloud, How Should Next Generation Utility Computing Infrastructures Be Designed ?* Research Report RR-8348. INRIA, juil. 2013. URL : https://hal.inria.fr/hal-00854204.