

Performance Study of Public Clouds

Lucas Nussbaum

Executive summary : Design methods and tools to evaluate the performance of public clouds

Key technical skills required : interest (and willingness to learn about) for deep & dirty technical stuff in Linux environments, performance measurement

Research team name :	Madynes
Research Unit :	LORIA / Inria Nancy – Grand Est
Intern tutor :	Lucas Nussbaum <lucas.nussbaum@loria.fr> In collaboration with CloudScreener (french startup)
Internship duration :	4 to 6 month

Context

There are now dozens of competing, public IaaS (Infrastructure-as-a-Service) clouds offerings, with various internal designs and architectures, that result in different performance characteristics. Moreover, as providers might use methods to enhance the performance perceived by customers that might try to perform benchmarking, such as allowing for more performance for a limited period of time.

This internship proposal is in the context of an ongoing collaboration with CloudScreener, a French startup founded in 2012 that has developed tools for cloud price and performance benchmarks and automated cloud recommendation to optimize the decision making process in term of cloud computing. CloudScreener's ambition is to become the worldwide standard for cloud decision making, and wants to be used for each cloud infrastructure deployment.

Description

The goal of this internship is to design new methods for the performance evaluation of public clouds offerings, robust to adverse strategies that might be deployed by some cloud providers.

Typically, the intern will :

1. Perform a survey of the state of the art of clouds performance measurement ;
2. Thanks to the collaboration with CloudScreener, which will provide access to many public clouds, evaluate the existing methods, and propose and evaluate new methods.