Techniques for the comparison of public cloud providers

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Cloud computing is the delivery of computing services over the Internet. It enables users to deploy applications on hardware provided by external providers, rather than building and maintaining their own servers. Cloud computing rose to popularity from 2006 with the introduction of Amazon Elastic Compute Cloud, Microsoft's Azure and the Google App Engine.

The main advantages of cloud computing for the users are: cost efficiency, scalability, rapid deployment and accessibility. It also offers advantages to the cloud providers, such as cost efficiency and a more optimal usage of their computing infrastructure. There are also downsides: security, dependence on Internet connectivity and less control over the platform.

We mentioned a few public cloud providers and there are several more. Choosing the most suitable one for a business' need is not easy. Different cloud providers offer different trade-offs in performance, cost and functionality. Comparing them is difficult, since a lot depends on what the business needs while all cloud providers attempt to make themselves appear attractive to all potential customers. Despite this, several techniques for comparing public cloud providers have been researched and developed, such as: Analytic Hierarchy Process (AHP), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), ELECTRE, CSP (Cloud Service Provider), CloudCmp framework, Fuzzy Inference System (FIS), Multi Attribute Group Decision Making (MAGDM). In this paper we compare AHP, CloudCmp and the TOPSIS to determine the most suitable comparison technique.

Keywords: cloud computing, techniques, comparison, performance, cost

Field of research: Software Engineering, Distributed systems

Topic: Techniques for the comparison of public cloud computing providers

Focus / research questions: What are the best techniques to compare public cloud providers?

Expected findings / results: By comparing the aforementioned techniques we aim to give a recommendation for the most suitable one depending on business needs.