Digital Single Market

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CELAR-based research paper takes best paper award

Drafted by a team of researchers from the “ATHENA” Research and Innovation Center (D. Tsoumakos, I. Konstantinou and N. Koziris) the paper, entitled “Automated, Elastic Resource Provisioning for NoSQL Clusters Using TIRAMOLA” was submitted with high hopes to the 13th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid’2013). CCGrid serves as an international forum for sharing recent research results and technological developments in large scale systems.

Awards in the categories best Doctoral Symposium paper, best poster, and best presentation were at stake. The three best paper nominations were:

1. “Partially Separated Page Tables for Efficient Operating System Assisted Hierarchical Memory Management on Heterogeneous Architectures”

from B. Gerofi, A. Shimada, A. Hori and Y. Ishikawa

2. “Resilin: Elastic MapReduce over Multiple Clouds”

from A. Iordache, C. Morin, N. Parlavantzas, E. Feller and P. Riteau

3. “Automated, Elastic Resource Provisioning for NoSQL Clusters Using TIRAMOLA” [WINNER]

from D. Tsoumakos, I. Konstantinou, C. Boumpouka, S. Sioutas and N. Koziris

The ATHENA team was thrilled to win the best paper award, which ranked its work the best of 57 accepted submissions and 257 proposed submissions.

The work presents a complete system for elastic resource management within NoSQL clusters that

operate over Cloud environments. NoSQL is an agile database form able to cope with unstructured, unpredictable data. The team modelled elastic actions in real-time as a Markov Decision Process (MDP – a mathematic framework for modelling decisions). The approach can be used to resize any NoSQL cluster in real time and optimise performance without human involvement. The system, named TIRAMOLA, is an open-source project (http://tiramola.googlecode.com [1]).

The notion of automated, elastic resource allocation, as well as the TIRAMOLA system architecture, are central to the FP7 CELAR project, which seeks to extend elasticity modelling and automated control from NoSQL clusters to any cloud-based application.

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www.celarcloud.eu/ [2]

(Article from ***net-cloud future*** magazine (2013) - for complete magazine cllck here [3])

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