ΔΙΑΛΕΞΗ

"Optimizing Workflows in Multi-[Platform|HW] Environments"

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Περίληψη – Abstract

The data and task heterogeneity of modern business and scientific workflows cannot be dealt with by any single Big Data platform. Moreover, exotic hardware, such as GPUs and FPGAs, is often employed to further boost performance of resource intensive workloads. Building the right multi-engine and possibly hardware heterogeneous environment for any given workflow, input parameters and execution goals is an intimidating task that can simply not be achieved manually, even by the most experienced systems architect.

In the first part of this presentation we explore ways to abstractly describe, optimize and execute any batch analytics workflow with respect to a multi-objective policy by seamlessly combining multiple platforms. Relying on cost and performance models of the required tasks over the available platforms, distinct workflow parts can be allocated to the most advantageous execution and/or storage engine among the available ones and the exact amount of required resources are provisioned. In the second part, we discuss ways to build an intelligent scheduler that can make automated decisions on both how and where to map arbitrary data analytics tasks to underlying hardware that may consist of a mix of accelerators and CPUs.

Katerina Doka is a senior researcher at the Computing Systems Laboratory of the Department of Electrical and Computer Engineering, National Technical University of Athens (NTUA). She received her Diploma in Electrical and Computer Engineering in 2005 and her Ph.D. in 2011 from NTUA. Her research interests lie in the field of Large Scale Distributed Systems, Big Data, Peer - to – Peer Technologies and Cloud Computing. Her efforts mainly focus on data management in distributed environments, optimization of Big Data analytics workflows and systems aspects of Blockchains. She has co-authored more than 30 scientific papers and worked in the coordination (WP leader), design and development of several National and European R&D programs such as GREDIA, ARCOMEM, CELAR, ASAP, TREDISEC, E2Data.

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