



Large Scale Distributed Systems - Performance Perspective

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DATE: Thursday, 3 August 2017
TIME: Starting at 12:30pm
VENUE: Murdoch University, Robertson Lecture Theatre
COST: Free

Abstract:

Large scale distributed systems such as grids and clouds have been used for serving large and complex applications. Grids and clouds performance became more important due to the increase of users and applications. Effective management of distributed resources is crucial to use effectively the power of these systems and achieve high system performance.

There are many issues that must be addressed for large scale distributed systems, such as: performance, resource allocation, efficient scheduling, energy conservation, reliability, cost, availability, quality. Complex multiple-task applications may have precedence constraints and specific deadlines and may impose several restrictions and QoS requirements. Therefore energy-efficient job scheduling is a difficult task in grids and clouds where there are many alternative heterogeneous computers. Advanced modeling and simulation techniques are a basic aspect of performance evaluation that is needed before the costly prototyping actions required for complex distributed systems.

In this talk we will present state-of-the-art research covering a variety of concepts on resource allocation and job scheduling in grids and clouds. Queuing network models of these systems will be described and analysed and performance metrics will be presented. Complex workloads will be examined including real-time jobs and scientific workflows. We will also provide future directions in the area of large scale distributed systems.

About the speaker:

Eleni Karatza is a Professor in the Department of Informatics at the Aristotle University of Thessaloniki, Greece. Dr. Karatza's research interests include Computer Systems Modeling and Simulation, Performance Evaluation, Grid and Cloud Computing, Energy Efficiency in Large Scale Distributed Systems, Resource Allocation and Scheduling and Real-time Distributed Systems. She is senior member of SCS, IEEE and ACM, and she served as an elected member of the Board of Directors at Large of the Society for Modeling and Simulation International (2009-2011).

Professor Karatza is the Editor-in-Chief of the Elsevier Journal “Simulation Modeling Practice and Theory” and Associate Editor of the “Journal of Systems and Software” of Elsevier. She also served as Editor-in-Chief of “Simulation Transactions of The Society for Modeling and Simulation International” and Associate Editor of “ACM Transactions on Modeling and Computer Simulation”. She has been Guest Editor of Special Issues in multiple International Journals.

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