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FCT FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

DEPARTAMENTO DE INFORMÁTICA

Scientific Workflows

COMPUTER SYSTEMS

CENTER FOR INFORMATICS AND INFORMATION TECHNOLOGIES

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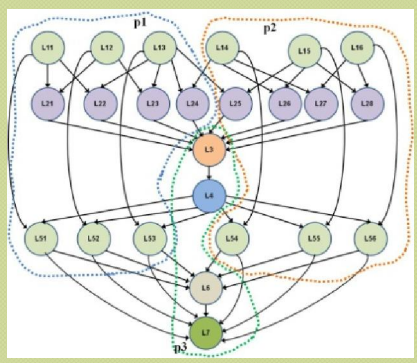
- (1995) MSc Informatics Engineering
- (1996-2003) Worked at Industry as Systems Engineer
- (1998-) Adjunct Professor at ISEL

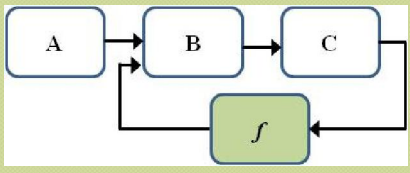
Objectives

- Scientific Workflows: Abstractions and Models for Parallel and Distributed Computing
- Dynamic structural and behavioral reconfiguration of workflows;
- Autonomic workflow activities running on distributed infrastructures such as Clusters, Grids and Clouds



Methodology

- Analyze case study scenarios where workflow paradigm can be applied to develop complex applications;
- Experimentation: how the existing workflow tools are suitable to develop these case study scenarios;
- Systematic approach to fit the application requirements that are not easily implemented with existing state-of-the-art tools.



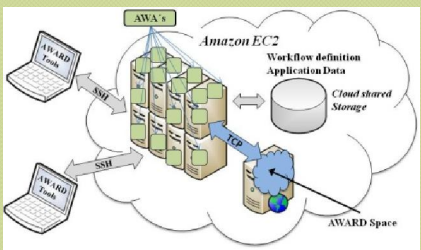
Expected Results

- Develop a prototype to support experimentation with new abstractions and models for large-scale and distributed scientific workflows.
- Publications:

[1] C. Goncalves, L. Assuncao, and J. C. Cunha, "Data analytics in the Cloud with Flexible MapReduce Workflows," in *Cloud Computing Technology and Science (CloudCom), In IEEE 4th International Conference on*, Dec. 2012, pp. 427 –434.

[2] L. Assuncao, C. Goncalves, and J. C. Cunha, "Autonomic Activities in the Execution of Scientific Workflows: Evaluation of the AWARD Framework," In IEEE *9th International Conference on Autonomic Trusted Computing (ATC 2012)*, Sept. 2012, pp. 423 –430.

[3] L. Assuncao, C. Goncalves, and J. C. Cunha, "On the Difficulties of Using Workflow Tools to Express Parallelism and Distribution - A Case Study in Geological Sciences," Proceedings of the International Workshop on Workflow Management of the International Conference on Grid and Pervasive Computing. IEEE Computer Society, 2009, pp. 104–110.



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