

Topic 2 – “Developing successful cloud software”

Alternative title

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Abstract—This is the abstract of the template document. It serves only as a starting point for editing. The title is an example with Topic 1. Similarly, you can choose Topic 2 – “..” or 3 – “..”. Additionally, you can add an alternative title. It can be a telling or even funny reference to your particular context.

I. INTRODUCTION

During the last decade we experienced a big change in the way software is developed and distributed. In this regard, cloud computing plays a crucial part where all the rules of classical software development are evolving to address the ubiquity and the faster time to market demands. An example of new architecture that leverages cloud computing is given by micro services, in which applications are essentially a composition of independent, uncoupled entities that communicate between each other. New roles emerged, such as DevOps, where development and operation converge into a single figure with the ability to implement and coordinate the high level of automation required by this new approach. Consolidated techniques like object oriented programming are shifting to a more abstracted paradigm such as MDE (Model Driven Engineering) where models are the building blocks of software systems, separating design and logic from implementation details [1], [2]. All these aspects are still growing towards maturity and they bring a whole new set of challenges and considerations.

Furthermore many efforts are being made in the creation of an ecosystem able to assist the developers in their work. As reported by G. Fylaktopoulos et al. [1], we already have at our disposal a whole set of integrated development environments (IDE) that try to offer a comprehensive set of functionalities to create, test and deploy cloud software. *give examples and stress the lack of important aspects covered*

paragraph 3 evolution in abstraction MDE SOA ASDaaS
Furthermore

paragraph 4 lack of security in all aspect of research in cloud
However...

II. IDEAS

Following the considerations exposed in the introduction, I formulated 3 research questions:

- 1) In this new landscape characterized by the convergence towards ‘everything as a service’ and the increasing abstraction of processes [3], how is software development impacted? What is the main trend in this regard?

- 2) In light of all the considerations we made about the requirements that cloud services development imply. What are the changes in the software development tool-chain?
- 3) How can we improve and standardize security methodologies for cloud software development?

REFERENCES

- [1] G. Fylaktopoulos, G. Goumas, M. Skolarikis, A. Sotiropoulos and I. Maglogiannis, “An overview of platforms for cloud based development,” 2016, https://www.researchgate.net/publication/290788490_An_overview_of_platforms_for_cloud_based_development.
- [2] A. Fuggetta and E. Di Nitto, “Software process,” in *Proceedings of the on Future of Software Engineering*. ACM, 2014, pp. 1–12.
- [3] Hind Benfenatki, Hamza Saouli, Nabila Benharka, Parisa Ghodous, Okba Kazar, Youssef Amghar, “Cloud Automatic Software Development,” *20th ISPE International Conference on Concurrent Engineering*, 2013, <https://pdfs.semanticscholar.org/860e/69b88b4dc1f01c1e61c3385f57df70fd7b72.pdf>.