Optimizing resource allocation for micro-services within Cloud and hybrid Cloud/Edge environments

Alessandro Di Stefano | DIEEI
University of Catania

Research context

The research activity is focused on cloud management in a multi-tenant, cooperative and competitive, hybrid environments.
The aim is to manage the QoS and investigate how adaptive strategies for orchestration can be considered in this context:

- Analyzing the issues related with the deployment of workflows in Cloud/Edge environments;

- Modeling micro-services applications and deployment clusters;

- Optimizing placement of container-based micro-services applications in Cloud, Edge and hybrid environments

Summer schools

Deeplearn2019: 3rd International Summer School on Deep Learning - Warsaw, Poland - July 22-26, 2019

MSCX2019: Mediterranean School of Complex Networks - Salina, Italy - 31 Aug - 6 Sep, 2019

Published conference/journal papers

- Al. Di Stefano, An. Di Stefano, G. Morana & D. Zito. "**Coope4M: A Deployment Framework for Communication-Intensive Applications on Mesos.**" 2018 IEEE 27th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE) (2018): 36-41.
- Al. Di Stefano, An. Di Stefano & G. Morana (In press). "**Scheduling communication-intensive applications on Mesos**". International Journal of Grid and Utility Computing
- A. Araldo, Al. Di Stefano & An. Di Stefano (Accepted) "**EdgeMORE: Improving Resource Allocation with Multiple Options from Tenants**". 2020 17th IEEE Annual Consumer Communications & Networking Conference (CCNC), Las Vegas, NV, 2020
- A. Araldo, Al. Di Stefano & An. Di Stefano (Submitted) "**Resource Allocation for Edge Computing with Multiple Tenant Configurations**". Proceedings of the 35th ACM/SIGAPP Symposium on Applied Computing
- B. Steer, A. Di Stefano, R. Clegg & F. Cuadrado "**Building distributed temporal graphs from event streams**" 2018 Second Workshop on Advances in Mining Large-Scale Time Dependent Graphs (TD-LSG)

Work in progress

- Applying EdgeMORE to multi-edge scenarios;

- Heuristics for Edge-Cloud computing container allocation;

- Extension of Coope4M to multi-cloud scenarios;