2nd IEEE Workshop on
Orchestration for Software-Defined Infrastructures (O4SDI)

http://o4sdi.unibo.it/o4sdi2

To be held in conjunction with the 2016 IEEE Conference on
Network Function Virtualization and Software Defined Networks (IEEE NFV-SDN 2016)

November 7, 2016 - Palo Alto, California, USA

Call for Papers

The current industry trend of convergence between computing and networking eco-systems clearly shows that software will play an unprecedented dominant role also in future communication environments. Computing, storage, and connectivity services, as well as any other present and future application instances, will be deployed in the form of virtualized assets within a software-defined infrastructure running on top of general-purpose processing and communication hardware, all managed and made available under the cloud "As A Service" paradigm. This technological convergence and infrastructure sharing between the computing and communication systems portend a scenario with a "fog" of micro-clouds composed of *generalized virtual functions* providing both applications and network services that supplement those deployed in traditional cloud datacenters.

The **Second IEEE Workshop on Orchestration for Software-Defined Infrastructures (O4SDI)** addresses the challenges that will facilitate orchestration and programmability of generalized virtual functions in Software Defined Infrastructures (SDI), enabling cloud and network providers to deploy integrated services across different resource domains. Orchestration mechanisms will facilitate the live deployment and lifecycle management of these virtual elements, at the application level, the server level, and the network level within a single domain and across multiple domains. Without such orchestration it will not be possible to enable dynamic establishment of generalized virtual functions chains, according to service requirements.

These challenges of orchestration are many-fold, with many open questions that need to be addressed in the areas of:

- network "softwarization," which requires unified management of computing, storage, and network resources for the effective deployment, lifecycle management, and run-time configuration of generalized virtual functions;
- abstraction models and open standard interfaces, needed for assuring vendor interoperability;
- adaptation and optimization mechanisms, which must be enforced at global and/or local level for coping with user demand, application requirements, resource unavailability, etc.

O4SDI aims at providing an international forum for researchers and practitioners from academia, industry, network operators, and service providers to discuss and address the challenges deriving from such emerging scenario where systems, processes, and workflows used in both computing and communications domains are converging. The workshop welcomes contributions from both computing and network-oriented research communities, with the aim of facilitating discussion, cross-fertilization and exchange of ideas and practices, and successfully promote innovative solutions toward a real programmatic use of software-defined infrastructures as a whole. Contributions that discuss lessons learnt and best practices, describe practical deployment and implementation experiences, and demonstrate innovative use-cases are especially encouraged for presentation and publication.

We are particularly interested in papers that cover, but are not limited to, the following topics:

- single domain and cross domain orchestration issues
- integrated network and computing resource control and management
- control and abstraction of heterogeneous networks
- orchestration in SDN/NFV
- run-time orchestration
- orchestration for next-generation IP and optical networks
- orchestration in 5G networks
- QoS/QoE in software-defined infrastructures
- orchestration for high-availability and resilience in software-defined infrastructures
- intent-based orchestration
- dynamic service composition and delivery
- network programmability for service chaining
- software engineering and operating systems techniques applied to orchestration
- description, specification, and abstraction languages for orchestration
- optimal orchestration algorithms
- context-aware orchestration
- functional architectures of orchestrating elements
- testbed experiments on orchestrations
- performance evaluation of orchestration elements
- standardization issues in orchestration

Important Dates

Workshop Paper Submission: *August 21, 2016 (EXTENDED, FIRM)*
Notification of Acceptance: *September 16, 2016*
Camera-ready Submission: *October 7, 2016*

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