TDSC Special Issue on **Cloud computing Assessment: metrics, algorithms, policies, models, and evaluation techniques**

Cloud Computing is emerging as a promising paradigm capable of providing a flexible, dynamic, resilient and cost effective infrastructure for both academic and business environments. It aims at raising the level of abstraction of physical resources toward a "user-centric" perspective, focused on the concept of *service* as the elementary unit for building any application. All the Cloud's resources, both physical/hardware and logical/abstract (software, data, etc) are therefore provided *"as a service"* and therefore the design and the implementation choices of a Cloud follow a *"service oriented"* philosophy. Cloud is actually a real, operating and effective solution in commercial and business context, offering computing resources and services for renting, accessed through the Web according to a client-server paradigm and regulated by specific *Service Level Agreement* (SLA). Apart from low costs, some other reasons behind the success of Cloud are: user-centric interfaces acting as unique, user friendly, points of access for users' needs and requirements; *on-demand service provision*; *Quality of Service* (QoS) *guaranteed offers*, and *autonomous systems* for managing hardware, software and data transparently to users.

There are several open issues in the Cloud computing paradigm, mainly concerning information security (confidentiality and integrity), trustiness, interoperability, federation, fault tolerance, etc., that very often need to be evaluated altogether looking for performance and dependability indexes and their correlation to SLA and QoS. In particular, efforts are still required in order to formally specify quantities, measures and requirements, to implement adequate protocols and policies, to model and investigate a Cloud infrastructure, system or subsystem, to monitor and predict the behaviour of a specific subsystem and so on.

TOPICS OF INTERESTS

It is the aim of the special issue to discuss novel ideas, taxonomies, ontologies, protocols, methods, algorithms, techniques and tools to specify, represent, evaluate and in-depth study Cloud computing features. Any contribution related to qualitative and quantitative evaluation is welcome. The main topics include, but are not limited to:

- QoS metrics, quantities, ontologies, taxonomies, representation methodologies and languages of Cloud;
- Cloud static and dynamic SLA processes and protocols;
- Monitoring and predictive models and techniques for Cloud systems;
- Resilience, fault tolerance, reliability, availability and dependability techniques, models, measurements and case studies on Cloud computing systems;
- QoS Assessment of Software Services and Service-Based Systems, Service Oriented Architectures;
- Optimization of Cloud Configurations;
- Security and trustiness in Cloud, techniques, algorithms and tools;
- Cloud performance and performability, scalability of performance and availability models;
- Billing, costs and business models of Cloud;
- Assessment of utility and Cloud computing market;
- QoS-based scheduling and load balancing in Cloud;
- Virtualized system: QoS assessment, QoS-based migration policies, VM-hypervisor reliability and rejuvenation policies and assessment;
- Cloud survivability and energy-aware models, measurements and case studies;
- Cloud reputation and recommendation techniques, analyses and tools;
- Cloud gaming and social networking statistics, measurements and case studies;
- Comparative assessments (Cloud, Grid, P2P, Clusters, …);
- Quantitative evaluations of the impact of Cloud;
- Workload characterization and CloudBursting.

IMPORTANT DATES

Deadline for submission of full paper: July 15, 2012.
First round of review: September 30, 2012.
Revised versions due: November 15, 2012
Final round notification: December 15, 2012
Expected date of publication of special issue: April 1, 2013.

Papers submitted to this special issue for possible publication must be original and must not be under consideration for publication in any other journal or conference. TDSC requires meaningful technical novelty in submissions that extend previously published conference papers. Extension beyond the conference version(s) is not simply a matter of length. Thus, expanded motivation, expanded discussion of related work, variants of previously reported algorithms, incremental additional experiments/simulations, may provide additional length but will fall below the line for proceeding with review. Guidelines for submissions can be found at: http://www.computer.org/portal/web/tdsc/author

Interested authors are asked to preliminary submit title and abstract of their contribution to guest editors by email.

SPECIAL ISSUE GUEST EDITORS

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