Special Issue on Storage for the Big Data Era

The Journal of Grid Computing

Guest Editors: Radu Prodan, Vlado Stankovski

Introduction

One of the main conceptual breakthroughs in computer science, invented in theory by the baroness Ada Lovelace and then implemented in the Charles Babbage's Analytic Machine design and the von Neumann computer architecture has been the ability to use 'memory' to store both data and instructions. Following decades of progress in computer science, we are on the fringe of a new Big Data Era that poses significant requirements for the storage of both data and instructions.

Undoubtedly, there exist problems for which even exascale computing approaches will not be enough. Immense storage capacity cannot be used without thoughtful storage designs that take care of many important aspects, such as availability versus cost. Storage can and still be used for both programs, that nowadays come in the form of functional Virtual Machine, container or other disk images and for storing raw data, such as file systems, object stores and other more structured forms of storage for data and metadata.

Nowadays, in distributed computing environments such as cloud federations, the functional and non-functional requirements for storage play an increasingly important role. Therefore, new methods, approaches and technologies are necessary to address these requirements. Innovative approaches may include innovative forms of cloud storage federations, distribution and content-delivery networks, provenance tracking and replica management strategies, multi-objective optimization of storage etc.

Objectives

New and innovative storage paradigms have not been sufficiently addressed in the literature. The objectives of this Special Issue of the Grid Computing Journal are therefore to provide focused dissemination of new approaches, methods, and technologies for storage in the Big Data Era.

Topics of interest may include:

- Hierarchical approaches for storing data for the Internet of Things
- Edge/Fog computing concepts for storage
- Data fusion technologies
- Software defined storage
- Storage-related Quality of Service models
- Service Level Agreements for storage
- Measurement methods for storage properties
- Storage approaches focusing on Virtual Machine, container and other disk images
- Federation forms for storage
- Security, privacy and other non-functional aspects of storage
- Storage for Open Data

When submitting your manuscript please indicate the Special Issue "Storage for the Big Data Era".

Process

All manuscripts will be peer-reviewed by at least three independent reviewers, and decision will be provided to the authors.

Deadlines

Following is a timeframe for the Special Issue:

- **June 30, 2017** Submission of original manuscripts. Early submissions are encouraged.
- **August 31, 2017** Preliminary decision or acceptance notice sent to the authors.
- **November 15, 2017** Submission of manuscripts for which revisions were requested.
- **December 1, 2017** Publication of the Special Issue.

Contact

Please send any requests for information to one or both Guest Editors at:

Associate Professor Radu Prodan, University of Innsbruck, Austria, Email: radu at dps.uibk.ac.at

Associate Professor Vlado Stankovski, University of Ljubljana, Slovenia, Email: vlado.stankovski at fgg.uni-lj.si

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