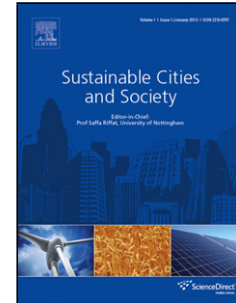


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Managing Big RDF Data in Clouds: Challenges, Opportunities, and Solutions

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Highlights

- We explore the existing challenges and the evolving opportunities in managing big RDF data in cloud environments.
- We highlight the basic principles of RDF data management, which allow researchers to know the most recent stage in developing RDF graphs and its achievement.
- We provide comparisons among current storage systems and query processing approaches.
- We highlight future challenges and opportunities in RDF domain.

Abstract

The expansion of the services of the Semantic Web and the evolution of cloud computing technologies have significantly enhanced the capability of preserving and publishing information in standard open web formats, such that data can be both human-readable and machine-processable. This situation meets the challenge in the current big data era to effectively store, retrieve, and analyze resource description framework (RDF) data in swarms. This paper presents an overview of the existing challenges, evolving opportunities, and current developments towards managing big RDF data in clouds and provides guidance and substantial lessons learned from research in big data management. In particular, it highlights the basic principles of RDF data management, which allow researchers to know the most recent stage in developing RDF graphs and its achievement.

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