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New paradigms for information and services management in grid and pervasive computing

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Abstract

Rapid development of new technologies for information management and knowledge extraction, evaluation and fusion, as well as introduction of new computational paradigms supporting such task will have a great influence on creation of future generation computer systems and very innovative, and efficient information and services management solutions for grid environment and pervasive computing. Such computational paradigms are very important especially while performing semantic analysis of acquired information or providing distributed or remote services considering user preferences and social requirements. Additionally, considering management activities in very large infrastructures like Cloud Computing and Big Data repositories, new approaches should focus not only on collecting, processing, intelligent searching and dissemination of information collected from different sources, but should enable to perform a deeper analysis, considering semantic meaning evaluation, data structures, and personal preferences in which such data may be applied for information and services management, and data distribution over global network or information society. Such pervasive and ubiquitous management paradigms are based on advanced ambient technologies like cyber world, smart cities, and virtual reality. In this paper will be presented several selected approaches development of such management technologies, and which are very important both from scientific and practical points of view..

Keywords: Pervasive computing, grid management, remote services, cloud security, Big data analysis

1. Introduction

Modern information and knowledge management technologies may be developed thanks to the use of advanced and intelligent computer systems including bio-electronic devices or cognitive information systems [15], and a number of different and innovative computational approaches like ubiquitous, cloud computing or ambient intelligence [14]. Recently mentioned techniques have made it possible to intelligently manage information and provide remote services in grid infrastructure and over global network. Such techniques are also goaled to collect and analyze information from different sources having visual, sound, or text message forms, and perform intelligent information fusion towards its compression and merit content extraction. Among important application of cutting-edge technologies we can also mention intelligent and personally oriented services

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